JOURNAL OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

3rd Series No. 9] JULY 1945 [Vol. 52

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Journal

ANNUAL ELECTION RESULTS

TO THE CHAIRMAN OF THE GENERAL MEETING, TUESDAY, 19 JUNE 1945

The Scrutineers appointed to count the votes for the Election of the Council for the Session 1945-1946 beg to report as follows:

2,557 envelopes were received—705 from Fellows, 1,170 from Associates, and 682 from Licentiates.

The result of the election is as follows:

COUNCIL, 1945-1946

PRESIDENT:

MR. PERCY EDWARD THOMAS (Cardiff) (unopposed).

PAST PRESIDENTS:

MR. WILLIAM HENRY ANSELL (unopposed).

MR. HARRY STUART GOODHART-RENDEL (unopposed).

Members of Council

Elected		*Votes*
1.	SIR LESLIE PATRICK ABERCROMBIE	1,577
2.	MR. THOMAS CECIL HOWITT	1,225
3.	MR. JOHN HENRY FORSHAW	1,216
4.	MR. HOWARD MORLEY ROBERTSON	1,197
5.	MR. ARTHUR CHARLES BUNCH	866
6.	MR. FREDERICK GIBBERD	844
Not Elected		*Votes*
7.	MR. CHARLES ANTHONY MINOPRIO	788
8.	MR. JOSEPH EMBERTON	660
9.	MR. WILLIAM MILBURN / MR. HENRY THOMAS SEWARD	564
11.	MR. STANLEY ARTHUR HEAPS	526
12.	MR. STANLEY CHURCHILL RAMSEY	500
13.	MR. JOSEPH HILL	499
14.	MR. WILLIAM NASEBY ADAMS	493
15.	MR. CHARLES WILLIAM CASHMORE NEEDHAM	444
16.	MR. JOHN WALTER MACKENZIE DUDDING	394
17.	MR. PERCY VIVIAN BURNETT	344
18.	MR. HERBERT JACKSON	338
19.	MR. FREDERICK JOHN HORTH	287
20.	MR. ALFRED HENRY BARNES	269
21.	MR. DONALD HANKS MCMORRAN	202
22.	MR. HOWARD VICARS LOBB	166
23.	MR. JOHN STANLEY BEARD	155
24.	MR. LESLIE ARTHUR CHACKETT	128
25.	MR. THEODOR HERZL BIRKS	53

2,548 Voting Papers were received, of which 5 were invalid.

Associate Members of Council

Elected		*Votes*
1.	MR. ERNEST BERRY WEBBER	1,442
2.	MR. HENRY BRADDOCK	728
3.	MR. ANDREW RANKINE	630
Not Elected		*Votes*
4.	MR. ARTHUR GEORGE LING	617
5.	MR. RONALD AVER DUNCAN	534
6.	DR. JOHN LESLIE MARTIN	490
7.	MR. PETER FAULKNER SHEPHEARD	480
8.	MR. MARTIN JOHNS SLATER	478
9.	MR. ROBERT LESLIE TOWNSEND	445
10.	MR. VIVIAN LESLIE NASH	430
11.	MR. WILLIAM THEODOR JACKSON	261
12.	LIEUT.-COL. VIVIAN HOME SEYMER	207

2,463 Voting Papers were received, of which 3 were invalid.

Licentiate Members of Council

Elected		*Votes*
1.	MR. CHARLES OLIVER	846
Not Elected		
2.	MR. FREDERICK CHARLES WAKEFORD	799
3.	MISS MARJORIE VECTA DUFFELL	466

2,135 Voting Papers were received, of which 1 was invalid.

Representatives of Allied Societies in the United Kingdom or the Irish Free State

(1) *Six Representatives from the Northern Province of England:*

MAJOR STANLEY WAYMAN MILBURN (Northern Architectural Association)

MR. JOHN SOMERVILLE BEAUMONT (Manchester Society of Architects)

MR. THOMAS MACKELVIE ALEXANDER (Liverpool Architectural Society)

MR. WILLIAM EDWARD BISCOMB (York and East Yorkshire Architectural Society)

MR. ROBERT ANDREW EASDALE (West Yorkshire Society of Architects)

MR. STEPHEN WELSH (Sheffield, South Yorkshire and District Society of Architects and Surveyors)

(2) *Five Representatives from the Midland Province of England:*

MR. CYRIL FREDERICK MARTIN (Birmingham and Five Counties Architectural Association)

MR. FRANK HENRY JONES (Leicester and Leicestershire Society of Architects)

MR. WALTER REGINALD STEEL (Northamptonshire, Bedfordshire and Huntingdonshire Association of Architects)

MR. FRANK ARTHUR BROADHEAD (Nottingham, Derby and Lincoln Architectural Society)

MR. EDGAR JOHN SYMCOX (East Anglian Society of Architects)

(3) *Six Representatives from the Southern Province of England :*
MR. PHILIP TILDEN (Devon and Cornwall Architectural Society)
MR. JOHN RALPH EDWARDS (Wessex Society of Architects)
MR. JOHN THOMAS SAUNDERS (Berks, Bucks and Oxon Architectural Association)
MR. ANTOINE ENGLEBERT GEENS (Hampshire and Isle of Wight Architectural Association)
MR. ARTHUR ERIC WISEMAN (Essex, Cambridge and Hertfordshire Society of Architects)
One Representative to be nominated by the South-Eastern Society of Architects

(4) *Four Representatives of Allied Societies in Scotland :*
Nominated by the Council of the Royal Incorporation of Architects in Scotland :
MR. ANDREW GRAHAM HENDERSON (Glasgow)
MR. JOHN ROSS MCKAY (Edinburgh)
MR. ALEXANDER GEORGE ROBERTSON MACKENZIE (Aberdeen)
MR. ALEXANDER NISBET MALCOLM (Stirling)

(5) *One Representative of Allied Societies in Wales*
Nominated by the Council of the South Wales Institute of Architects :
MR. JOHNSON BLACKETT (Caerleon)

(6) *Two Representatives of Allied Societies in Ireland :*
MR. VINCENT KELLY (Royal Institute of the Architects of Ireland)
One Representative to be nominated by the Council of the Royal Society of Ulster Architects.

Representatives of Allied Societies in the British Dominions Overseas
To be nominated by the Councils of each of the following :
The Royal Architectural Institute of Canada
The Royal Australian Institute of Architects
The New Zealand Institute of Architects
The Institute of South African Architects
The Indian Institute of Architects

Representative of the Architectural Association (London)
MR. GRAHAM RICHARDS DAWBARN

Representative of the Association of Architects, Surveyors and Technical Assistants (now the Association of Building Technicians)
MR. ANDREW CHARLES HUGH BOYD

Chairman of the Board of Architectural Education
MR. BASIL MARTIN SULLIVAN

Chairman of the R.I.B.A. Registration Committee
MR. DARCY BRADDELL

Chairman of the R.I.B.A. Official Architects' Committee
(To be appointed)

Representative of the R.I.B.A. Salaried Members' Committee
(To be appointed)

Chairman of the R.I.B.A. Allied Societies' Conference
MR. ARTHUR LEONARD ROBERTS (Winchester)

Honorary Auditors
MR. ERNEST BUDGE GLANFIELD (unopposed)
MR. JOHN NEWENHAM SUMMERSON (unopposed)

ERNEST G. ALLEN, *Chairman*
HAROLDE E. MOSS
G. A. COOMBE
C. J. EPRIL
A. FOSTER
H. VICTOR KERR
CHARLES SYKES
CECIL H. PERKINS
G. H. FIELDER
W. L. TWIGG
S. G. LIVOCK
FRANK WOODWARD
Scrutineers

14 June 1945.

COUNCIL ELECTION 1945 AND MEMBERS SERVING OVERSEAS

Letters have been received from members serving in the Forces overseas that they received the Council voting list too late to enable them to return it by the stipulated date.

First of all it should be pointed out that no voting papers were sent direct by the R.I.B.A. to any members with overseas addresses as Bye-law 35 provides that " the voting list shall be issued to all members in the United Kingdom or the Irish Free State, etc., etc." If the list was sent to a member's home address it may have been forwarded on to him by a relative, in which case if it was sent on at once to a member serving in the R.I.B.A. there should have been time for him to have recorded his vote. But quite apart from the provision of the Bye-law precluding the issue of voting lists to members other than those with addresses in the United Kingdom or Irish Free State, it would have been out of the question to have given all members serving overseas the opportunity of voting without greatly extending the time allowed for their return laid down in Bye-law 35. Any relaxation of the Bye-law would have meant applying to and obtaining the special sanction of the Lord President of the Council.

It may be argued that this step should have been taken and the whole election machinery adjusted to allow of the recording of votes by members serving in all theatres of war however distant. On the other hand, it is only right to point out that at the time the election machinery was put into operation the war with Germany was still being fought and it is doubtful if many members would in fact have been able to avail themselves of the opportunity of voting.

Again, the arrangements made for voting by service men and women in the General Election may be quoted as an example of what can be done if there is a real desire to give them this privilege, but against that it must not be forgotten that the whole resources of the State which enable this to be carried out are not available to the R.I.B.A.

There is one further point worth mentioning—members normally resident or practising in the Dominions, Colonies and India have never had the opportunity of voting in the Council election.

It is to be devoutly hoped that by the time the Council election is held in 1946 the vast majority of those members at present serving overseas will be home again and able to record their votes in the ordinary way.

HONORARY OFFICERS

At the first meeting of the Council of the Royal Institute of British Architects for the Session 1945-1946, held on 3 July 1945, the following Honorary Officers were appointed :—

Vice-Presidents :
Mr. J. Murray Easton.
Mr. T. Cecil Howitt, D.S.O. (Nottingham).
Mr. L. H. Keay, O.B.E., M.Arch.(Lvpl.), (Liverpool).
Mr. A. Leonard Roberts (Chairman of the Allied Societies' Conference), (Winchester).

Honorary Secretary :
Mr. Michael Waterhouse, M.C., B.A. Oxon.

Honorary Treasurer :
Mr. John L. Denman, J.P. (Brighton).

R.I.A.S. ANNUAL CONVENTION

The Convention was held in Glasgow on 1 June on the curtailed lines which have existed during the war years. In addition to some 75 members, the company of the President and Secretary of the R.I.B.A. was gratefully appreciated. The retiring President, Mr. J. R. McKay, A.R.S.A., F.R.I.B.A., in a short address referred to the preparation of the Approved Housing Designs prepared for the Department of Health for Scotland and the importance of the future training of the architect. Mr. A. G. Henderson, A.R.S.A., F.R.I.B.A., Glasgow, was installed as successor. Following the general meeting a luncheon was partaken of in the Grosvenor Restaurant and among the speakers were the Lord Provost of Glasgow, Dr. Robert Robertson, and the Presidents of the R.I.B.A. and R.I.A.S.

SCALE OF ANNUAL SALARIES FOR ARCHITECTS

The attached Scale of Annual Salaries for Architects was approved by the Council at their meeting on 19 June 1945. This replaces the 1937 scale which was published in the 1939-40 Kalendar. Copies of the scale are available to members on application.

(Salaries are on pre-war basis and except for Junior Architectural Assistants are for Registered Architects only).

PART I

Scale Applicable to the Staffs of the Government, Local Government, Commercial and Industrial Undertakings

Executive Staff (except Assistant Architect Grade II undertaking duties of Managing Assistant)

			See Note
(*a*)	Architect or Chief Architect ..	£1,000 to £3,500	8
(*b*)	Deputy Architect or Deputy Chief Architect	75 per cent. of salary of Architect or Chief Architect	8
(*c*)	Assistant Chief Architect ..	£1,500 to £1,800	9
(*d*)	Superintending Architects (1) and (2) depending upon number of branches supervised	(1) £1,200-£1,300 (2) £1,200-£1,500	10
(*e*)	Branch Architects	£900-£1,150	11
(*f*)	Assistant Architects. Grade I	£650-£850	12
(*g*)	Assistant Architects. Grade II	£550-£650	12
Non-Executive Staff			
(*h*)	Assistant Architects. Grade III	£250-£550	13
(*i*)	Assistant Architects. Grade IV	£250-£500	13
(*j*)	Junior Architectural Assistants (Unregistered)	£120-£230	14

NOTES

1. The Scale indicates appropriate Salaries on a *PRE-WAR* (March 1939) AND NOT A POST-WAR BASIS.

The Salaries should be increased by amounts to cover :—

(*a*) The changed value of money in comparison with that in the pre-war period, and this may sometimes necessitate

(*b*) Cost of living bonus.

Employing bodies may elect to have either inclusive salaries at higher than pre-war levels and reflecting the changed value of money or they may follow the precedent adopted after the 1914-1918 war and fix basic post-war salaries higher than pre-war but subject to a fluctuating cost of living bonus until approximate stabilisation is reached. Generally the salaries of architects and assistant architects should not be less than those of the other main professions employed by the same body.

2. The Scale is intended to apply to the immediate post-war period and will be reviewed from time to time until approximate stabilisation is reached.

3. In all cases the salaries in Part I are gross, inclusive of amounts deducted for pensions, superannuation, etc.

4. The Scale (*h*) (*i*) and (*j*) is based on normal London conditions and normal working hours and may vary slightly with the locality where such variations can be justified.

5. The Scale should apply irrespective of sex provided the duties, responsibilities and services rendered are identical.

6. Salaries in Part I are subject to annual increments, within the various grades, and in Grades III and IV the initial salary should take into consideration ability and experience.

7. Organisation of offices necessarily varies greatly depending upon the character of the work. In medium sized and large offices where the work consists mainly in the design of buildings and the supervision of their construction, it would normally be necessary to divide the work at headquarters between a number of branch architects under the general control of the higher staff. A branch would normally consist of the Branch Architect, an Assistant Architect Grade I, two or sometimes three Assistant Architects Grade II, and a total of from ten to twenty Assistant Architects, i.e., Grade III Registered Assistants, Unregistered Assistants and Junior Assistants, the numbers depending upon the character of the work and whether it was geographically concentrated or scattered throughout the country.

In some organisations it would be necessary in addition to have district offices in charge of either an Architect or an Assistant Architect Grade I depending upon the responsibilities of the office.

In small offices where the Assistant Architects would normally work directly under the Architect, the numbers in Grades I and II would depend upon the volume of the work and on the special responsibilities of the Architect. In this size of office it would sometimes be necessary for one or more of the assistants to be paid at rather higher rates than Assistant Architects I and II for carrying greater responsibilities than would normally be undertaken by Assistant Architects Grades I and II with a Branch Architect or for carrying out the duties of deputy.

8. The salaries of Architects or Chief Architects, and of Deputy Architects or Deputy Chief Architects when employed, cannot be governed by the volume of work for which they are responsible as in many cases they are called upon to undertake work additional to that which an Architect in private practice would have to undertake for normal fees. An official Architect is often called upon to advise his Authority on work not to be carried out in his department ; moreover, his duties may include regulatory control of building and town planning. Architects or Chief Architects should, as a general rule, hold positions of equality with other chief officers employed by the same authority. In cases of small authorities where circumstances would not justify £1,000 per annum, a salary of not less than £800 should be considered a minimum in order that the status of the appointment can be maintained. Employing bodies, including public and municipal authorities, are invited to consult the R.I.B.A. regarding the computation of salaries falling within this range according to the nature of the appointment, the type of work and responsibilities involved. Members of the Institute are invited to consult the R.I.B.A. in connection with advertised posts for Architects and Chief Architects and deputies to ascertain whether the salaries offered have received the approval of the R.I.B.A.

9. In the largest offices (such as those where at least four Superintending Architects are employed) it will sometimes be necessary to have in addition to the Chief Architect and his Deputy one or more architects of higher rank than Superintending Architects, *e.g.*, Assistant Chief Architect at salaries between £1,500 and £1,800 per annum depending upon the responsibility involved.

10. Superintending Architects will usually be necessary to co-ordinate the work of Branch Architects when there are several branches or when the duties of the Chief Architect are such that he is unable to give such personal supervision as will adequately co-ordinate the work.

Superintending Architects on the higher salary indicated, in addition to carrying out certain work directly, should normally be able to supervise the work of three of four branches.

11. In large offices it will usually be advisable to regard the Architects' Branch as the working unit. It is necessary to have branch Architects of sufficient professional experience that subject to general direction and co-ordination from the Chief Architect and higher staff they can assume full responsibility for the design and execution of the work of a branch as outlined under note 7.

12. Assistant Architects Grades I and II normally function in an executive capacity under the Branch Architect or directly under the Chief Architect in the same way as the partners in a private firm, except that one of the Grade II Assistant Architects would undertake duties similar to those of the Managing Assistant to a large firm of private architects. Grade I would be either the senior of the Assistants in a single unit organisation, or in a Branch at headquarters, or the Assistant Architect, *e.g.*, District Architect, in charge of a small office geographically situated in a district where work is being carried out away from the main office.

In small offices it would often be unnecessary to employ a special grade of Managing Assistant as, when the responsibility is less than it would be with a Branch Architect, such duties could be undertaken by the Senior Assistant Architect Grade IV.

13. The salary scale indicated for Grade III is appropriate for those in medium sized and large offices who function similarly to assistants other than the managing assistant in a private firm. In small offices circumstances would often prohibit a maximum salary of £550 per annum and in such cases a maximum of £500 per annum as indicated in Grade IV would be considered reasonable.

14. It is considered that assistants who pass or are exempted from the Intermediate Examination of the R.I.B.A. might reasonably be placed within the scale (*j*) the figure of £120 being the minimum salary for a student of about 19 years of age who has reached that standard from the schools but has had no office experience. Such an assistant

should obtain relatively large increments so that the maximum of the scale should normally be reached in three or four years. For assistants of a similar age who have been trained in offices and who pass, or have been exempted from the Intermediate Examination of the R.I.B.A. or have equivalent qualifications a minimum salary of £150 would be appropriate.

PART II

Scale Applicable to the Staffs of Architects in Private Practice

Salaries appropriate to Assistants to Architects in private practice cannot be assessed in a precise scale to the same degree as is possible in the offices of Government, Local Government, Commercial and Industrial Undertaking. The staff in a private Architect's Office and their individual responsibilities fluctuate to a much greater extent and it is not usual to have pension and superannuation schemes.

While this is so the salaries and conditions of service of registered Architects employed in a non-executive capacity by Architects in private practice and the salaries of junior Architectural Assistants should conform broadly to the salaries indicated at (*h*), (*i*) and (*j*).

For staffs carrying out duties of greater responsibility than Assistant Architect Grade III salaries commensurate with the responsibility involved should be paid.

Scale of Fees for State-Aided Housing Schemes

At their meeting on 19 June the Council approved the attached revision to Clause C of the Scale of Fees for State-aided Housing Schemes which was published in the June 1944 issue of the JOURNAL.

C. HOUSE DESIGN

(i) For taking instructions, preparing sketch plans, submitting to Committee, making variations to suit requirements and re-submitting, preparing specification, ⅛ inch scale and ½ inch scale working drawings and full size details of the approved designs, submitting plans to the Local Authority as required by building regulations and supplying two copies of these documents for the use of the main contractors.

(ii) Obtaining quotations for P.C. sums, obtaining tenders from contractors, submitting tenders to the Committee and advising the Committee on the contract.

(iii) Supplying instructions to the contractors as provided for in the Conditions of the Building Contract, general supervision of the work but not constant superintendence, reporting to the Committee on the progress of the work, instructing Clerk of Works, issuing certificates, making out report under the maintenance clause of the contract and settling final accounts.

The fees for the services in paragraphs (i) (ii) and (iii) are to be :—

For the first	4	dwellings	£22	a dwelling
,, ,, next	6	,,	£20	,,
,, ,, ,,	15	,,	£18	,,
,, ,, ,,	25	,,	£16	,,
,, ,, ,,	25	,,	£14	,,
,, ,, ,,	25	,,	£12	,,
,, ,, ,,	25	,,	£10	,,
,, ,, ,,	25	,,	£9	,,
,, ,, ,,	25	,,	£8	,,
,, ,, ,,	25	,,	£7	,,
,, ,, ,,	25	,,	£6	,,
All over	225	,,	£5	,,

It is the intention that a reasonable number of different designs shall be included in this scale up to a number not exceeding ten designs in the larger number of dwellings.

In the case of four dwellings, two different designs are to be provided if required, and in the case of six dwellings three different designs are to be provided if required.

If the architect is not required to perform the services set out in paragraph (iii) the fee is to be 60 per cent. of the total fee under this Clause.

If the architect is not required to perform the services set out in paragraphs (ii) and (iii) the fee is to be 50 per cent. of the total fee under this Clause.

Technical Information for Demobilised Architects

The Chairman of the Demobilisation Committee has written to the Press repeating his previous request to manufacturers of building materials and equipment that they should circulate catalogues, information sheets and other data to all architects as and when they resume their practices.

All architects serving with the Forces have already been invited to notify the Institute immediately they return from service, and a notice of their names and addresses will be published in the technical press at regular intervals. The first such list appears in the Members' Column on page 276.

In order that the facilities already offered by a large number of manufacturers may be made available to all in need of them, members are reminded again of the importance of notifying the Institute immediately they return to civil life.

R.I.B.A. Card Index—Post-War Employment

In order that the fullest possible assistance may be given to those requiring employment on demobilisation or release from national service, it is important that notice should be sent to the Secretary R.I.B.A. immediately a man or woman becomes available for employment. Those who have already completed and returned Questionnaires "A" and "B" should give notice of any change in their qualifications or plans for post-war employment. Those who have not submitted Questionnaires should do so at once.

The necessary forms may be obtained on application to the R.I.B.A.

Payment of Fees by Stages

Owing to the present restriction on general building work it will be some time before building owners will be able to proceed with rebuilding and development of their property. In the meantime, however, they are desirous of having plans prepared so as to be ready, when restrictions are relaxed, to carry out their projects. The architects thus employed should, at the time of their employment, make proper arrangements with their clients on the basis of the R.I.B.A. Scale of Charges for payment of fees as their work proceeds. In normal times it was the usual and proper practice for such stage payments to be made and there is no reason in these abnormal times to vary that practice. In cases where there is a written agreement between client and architect, payment by stages is always provided for, and the draft agreement prepared by the R.I.B.A. for State-aided housing work contains such a provision.

The attention of members is called to this matter so that where there is not the formality of a written agreement a clear understanding should be arrived at with their clients as to the payment of fees.

The American Library in London

Members of the R.I.B.A. are invited to use the American Library in the American Embassy, 1 Grosvenor Square, which has been established by the U.S. Office of War Information.

A wide range of American books, documents, and periodicals is available. Enquiries are welcomed and no cards of admission are necessary. The Library is open to the public from 9 a.m. to 7 p.m., Monday through Saturday.

President, T.P.I.

At the first meeting of the newly-elected Council of the Town Planning Institute, held on 21 June 1945, Mr. Thomas Sharp [*L.*] was elected for the year 1945-46.

THE FUTURE OF ARCHITECTURAL EDUCATION

By L. B. BUDDEN, M.A. [*F.*]

Roscoe Professor of Architecture in the University of Liverpool

Read at an Informal General Meeting at the R.I.B.A. on Tuesday 19 June

The President in the Chair

In discussing the future of architectural education I propose to proceed from the assumption that what is to be desired is progressive development and not revolution. This to some may be an uncongenial hypothesis, but I believe it to be not only the most rational but the only practical one to adopt. I shall not presume to offer an all-embracing programme, still less shall I venture to indulge in prophetic visions of a world to come in which all our methods of teaching and learning must either be abandoned or radically re-cast. My aim will be much less ambitious: it will be simply to concentrate on certain aspects of architectural education as it exists and to emphasise the need for changes, improvements and developments where these things seem to be most urgently required. Inevitably I shall traverse ground already more authoritatively covered by a Report recently submitted to the R.I.B.A. Board of Architectural Education. The Report to which I refer is that of the Special Committee appointed by the Board to consider and make recommendations regarding the present state of the education of our profession. In part at least I shall be doing no more than elaborating some of the substance of that Report. For the rest I must take sole responsibility for the opinions I shall express.

Articled pupils and apprentices

During the last half century we have seen the school system of education in architecture superseding pupilage and apprenticeship throughout the country. The R.I.B.A. has encouraged this process. Following the example set by the General Medical Council, it has, with due and effective safeguards for the maintaining of proper standards, delegated to Recognised Schools the task of qualifying candidates for admission to the profession. This it has done because it has appreciated that the tasks of education and ultimately of qualification could best be performed through institutions specifically created for and devoted to those ends.

In pursuing this policy the R.I.B.A. cannot fairly be accused of neglecting the needs of articled pupils and apprentices. For the benefit of all those who, for whatever reason, have been unable to attend and graduate through a Recognised School of Architecture it has maintained its own centralised system of examinations—and will, no doubt, continue to do so as long as candidates present themselves in sufficient numbers. Through those examinations the way is open to all who still enter the profession as pupils or apprentices to qualify for Associate Membership of the Institute and thus for admission to the Statutory Register of Architects.

But the Institute has not been concerned only to provide qualifying tests which may be taken by office trained candidates. Whilst not itself assuming teaching responsibilities, it has done much to induce pupils and apprentices to take advantage of whatever educational facilities might be available to them in the form of evening or part-time day classes. Thereby it has indirectly helped to increase the number of such classes and to extend their range.

It may indeed be questioned whether in this direction it has not done too much. Some local education authorities have of late shown signs of entertaining ambitions which they were neither situated nor fitted to realise; they have appeared to contemplate multiplying and expanding technical courses of one sort and another in the expectation of being able to extract concessions from the Institute which might ultimately lead to official recognition. This would appear to have happened in areas incapable of sustaining an adequately staffed and equipped school of architecture and even in places where Recognised Schools were already established. The Institute has long adhered to a well-considered policy regarding the regional distribution of Recognised Schools. It has for good and sufficient reasons granted Recognition only to schools at carefully chosen centres and has consistently fostered their development by withholding Recognition from other institutions. It has thus helped to consolidate, to concentrate rather than to dissipate, educational resources. Tendencies which might prejudice the fulfilment of that policy should therefore be firmly and decisively checked. In the past the dangers implicit in those tendencies have not, I think, always been appreciated. They have still to be watched. Otherwise the proper concern which the Institute has always shown for the least fortunate of the recruits to the profession may be exploited—with embarrassing and regrettable consequences.

Any extension of evening and part-time day classes must have the effect of arresting the normal decline of pupilage and apprenticeship; and to prolong the life of these admittedly obsolete methods of architectural training cannot be said to be in the best interests either of the students, the profession or the community. Yet the problem remains. A proportion of candidates of real potential ability become articled pupils and apprentices every year because their parents or guardians lack the means to send them to schools of architecture. How without injustice and without loss, both to the profession and to society, are their cases to be met in future?

The answer to that question is surely to be found in the provision of a sufficient number of scholarships and grants to enable every student, who shows genuine promise but who lacks the requisite financial means, to attend a Recognised School. Already the various sources of assistance on which it is possible to draw are considerable. The profession itself, in accordance with the requirements of the Architects' Registration Act, is responsible for offering annually a useful number of Maintenance Scholarships—and that number is likely to increase in the near future. In addition there is available a wide range of scholarships, bursaries, grants and loans administered by the State, by local authorities, by schools, by charitable trusts and by private bodies. All these means of aid are open to prospective students of architecture and in the years immediately preceding the war more and more candidates took advantage of them. In many schools they formed an appreciable proportion of the total complement of students and included some of the most gifted. Those who had been awarded Maintenance Scholarships of the Architects' Registration Council were commonly amongst the best students in any school.

But it cannot be said that the position regarding existing resources is satisfactory. In the first place their present extent and variety appear not to be widely enough known either to the headmasters or careers-masters of all secondary schools nor are parents always sufficiently informed about them. In consequence young people, with the desire and capacity to become qualified architects, but whose parents cannot afford to send them to a

Recognised School of Architecture, either abandon the idea of entering the profession altogether or, *faute de mieux*, seek to do so by way of articled pupilage.

Numerous and varied as are the existing sources of financial aid, they are far from sufficient to meet the real needs of the case. Even if the fullest use were to be made of them, they would still fail to bring a systematic course of school training within the reach of all those who require and deserve it. Maintenance rather than tuition fees represents the greater part of the expenses that are entailed by the normal five-year qualifying course at a Recognised School. Whilst some local authorities appreciate this and make generous allowances covering both maintenance and tuition costs for the entire period, others limit the tenure of their maintenance and fee paying scholarships and grants to three years ; whilst others again restrict their assistance to relief from tuition fees only. Least satisfactory of all is the policy adopted by some authorities of granting loans. The cumulative burden which may be imposed on students taking a long course needs scarcely to be pointed out ; it can have a crippling effect during the early years of their professional careers. Finally, it is the exception rather than the rule for local authorities, before making an award, to ascertain whether a candidate has been provisionally accepted by a Recognised School and may therefore be reasonably assumed to possess the mental aptitudes and interests which should fit him or her to embark on the study of architecture. The result is that from time to time the Schools find themselves expected to admit scholarship or grant-aided students whose true vocation is certainly not architecture, whatever their suitability for other professions or vocations may be.

If the passing of pupilage and apprenticeship is to be hastened, as it should be, the reforms that are needed are sufficiently obvious. The resources which actually exist for enabling potential students to qualify through Recognised Schools must be made more widely known and those resources must be considerably enlarged. Scholarships and grants from local authorities generally will have to be on a more adequate scale ; they will have to cover the whole period of school training and involve no obligations of repayment. And the provisional acceptance of a candidate by a Recognised School should in future become a pre-condition of any award.

I do not myself think that this programme is impracticable or that it must necessarily be a long time before it can be carried out. Local authorities are increasingly disposed to assist the further education of promising students who wish to qualify for the professions. If they were to be approached by the Institute and the facts fully laid before them, I believe that in the main they would give serious and sympathetic consideration to the claims that could fairly be made on behalf of architecture and that they would respond generously. For the conviction is rapidly gaining ground that no student who possesses the requisite abilities should be denied the opportunity of being properly educated for the profession in which he could best serve society simply because he is not able himself to afford the cost of that education. When this view and its implications have been completely accepted, pupilage and apprenticeship will no longer be able to survive ; they will automatically be eliminated. Fitness to enter on a systematic course of architectural training will have become what it should be, the sole condition which must be satisfied to obtain admission to a Recognised School.

Recognised schools

Let us now consider the position of the Recognised Schools themselves. Since the beginning of the present century the R.I.B.A. has granted recognition to selected schools of architecture in a variety of institutions in Great Britain and the Dominions. There are at the present time twenty-six schools which are fully recognised ; fifteen of them are in Universities, eight are in Art or Technical Colleges, two are in Polytechnics and one is an independent school. Eleven schools have been accorded Intermediate recognition. Of these one is in a University, seven are in Colleges or Schools of Art, two are in Technical institutions and one has been established under the auspices of an Academy.

The Institute in deciding whether in any given case a school should be officially recognised has been influenced in the past by considerations of the following kind : How far there could be said to be a real need for a school of architecture in the locality concerned, the nature and extent of the region from which the school might be expected to recruit its students, the situation of the school in relation to other schools already recognised, the character and scope of the curriculum submitted, the standards attained in the work actually produced, and finally the resources available in staffing, accommodation and equipment and the prospects of their development. The educational status of the institution in which a school of architecture might be established has not been a matter which the Institute has appeared to consider to be important. Universities, Art and Technical Colleges, Polytechnics, independent bodies and Academies seem, as governing authorities, to have been equally acceptable to it. Whether this attitude need have been adopted it is useless now to enquire. What, I think, may profitably be discussed are its results and how they might be mitigated, if not completely liquidated, in the future.

The consequences of the apparent indifference of the R.I.B.A. to the educational status of the institution in which a Recognised School may be established could not, I imagine, have been entirely foreseen. For colour has beyond question been given to a number of ill-founded ideas. By many members of the profession it has been assumed that all that really matters is that the actual work of a school of architecture shall reach and maintain a certain standard ; that, if it does that, it is enough ; that the school does not need any other title to respect, and can therefore afford to dispense with the advantages of being part of an educational institution of the first rank. Others again have concluded that it is an open question as to which kind of educational environment is really the best for a school of architecture. Whilst the public itself continues to be uncertain about the standing of a profession whose members—even when pupilage and apprenticeship are no more—may be educated in a University or in any one of a mixed assortment of technical institutions.

The parent body : university, technical college, etc.

First let us examine the assumption that the kind of institution with which a school of architecture happens to be associated is a matter of no great moment ; that the work which the school does is what counts—that and nothing else. There is a forthright simplicity about this view that makes it superficially attractive ; but it over-simplifies the issue and is at best no more than a half-truth. Only in a capital city do the conditions exist in which a school can hope to win for itself and maintain a sufficiently assured position as an independent body. Elsewhere, if it is to secure the resources and inspire the confidence that it should command, it must be established either under the *ægis* or as an integral part of a larger institution having acknowledged authority. Now the position which such an institution holds in the world of higher education cannot reasonably be regarded as of no consequence to the school of architecture that is associated with it. For the esteem in which the type of institution is held must affect the reputation of the school for which it is responsible ; it must affect the influence of the school, its capacity to gain support, to attract teachers of quality to its staff, and to recruit promising students from a wider area than its immediate environment. There can be, I submit, no argument as to the category of educational institution which is everywhere acknowledged in this country to be the highest. It is that of the University.

But granting this, may there not still be some justification for doubting on other grounds whether a University does really afford an appropriate and congenial home for a school of architecture ? May it not provide an environment in which critical rather than creative values are chiefly esteemed ? May the true aims of architectural education not be misunderstood and

disproportionate emphasis be given in consequence to elements in the curriculum that are of secondary importance? As a governing authority may a University not be too remote in its interests and too rigid in the control it exercises? It is true that some schools of architecture, when they were first established in Universities, went through a somewhat difficult period. They were accepted, as it were, on sufferance, tolerated rather than welcomed; occasionally their development was even obstructed for a time. But that initial phase, when it did occur, lasted for only a short time and is long since past. To-day all the academic schools fully recognised by the Institute are valued departments of the Universities to which they belong and their welfare is consistently and sympathetically promoted.

It could not reasonably be otherwise. The Universities of this country have not been devoted solely to abstract studies and the pursuit of pure scholarship. One of their major responsibilities has been the education of the professions. It is a responsibility which they first assumed when they established Faculties or Schools of Law and of Medicine; and it has been progressively extended as additional Faculties, Schools and Departments have been created covering various fields of Applied Science, Engineering, Economics and other subjects. On no logical ground, therefore, could the education of architects be regarded as outside the scope of the functions of a University. The nature and range of the studies embraced in the pursuit of architecture and the importance of the services which the architectural profession can render to civilised society fully entitle the subject to the place it now holds in the curricula of many of the Universities of the British Commonwealth.

The case for university attachment

I will not expatiate on the benefits which accrue to a school of architecture when it is able to draw on the resources of a University in scientific and arts subjects, nor on the opportunities that are open to its students of widening their interests through the activities and contacts of undergraduate life. The advantages to be derived from both sources are self-evident. There are, however, two points that it may be well to stress, as they do not always appear to be sufficiently appreciated. The first is that a University is a self-governing body. Its teaching members have a constitutional position which gives them effective powers in determining educational policy, in the making of appointments, in the allocation of financial means, and in the control of administration. They are thus very differently situated from teachers who are employed by a local authority. Those who hold teaching appointments in a University are responsible to their colleagues: those who serve a local authority are responsible in the first instance to a supervisory Committee, of which they are not themselves members, and ultimately to a Council that is usually more interested in and more competent to discuss the issues of local politics than the conduct of professional education. The position of the teacher in these circumstances is not comparable to that of the holder of an academic post, though his qualifications may be as good or better than those of the latter. It is a position which, I suggest, no member of the staff of a school of architecture fully recognised by the Institute should be expected to be content to occupy.

The second point which I would emphasise is this. A University ensures that progress in education is orderly and consistent. It does this by its constitution and procedure as much as by its code of statutes, ordinances and regulations. It can, therefore, provide for architectural education the conditions which permit it to develop most satisfactorily. Two dangers can beset educational policy in architecture: it can become too rigid; and it can become altogether too flexible. Of these opposite perils, the latter is the more serious. The need for change in response to changing conditions is usually realised: the equal need for stability and continuity is less well understood. And nothing can so surely produce chaos in a school of architecture as a constant series of revolutionary experiments in direction, organisation and method—however bright the new ideas may seem and however well intentioned and enthusiastic their advocates. From such hazards a school established in a University is effectually protected; and that, especially at the present time, is no small blessing.

The final consequence of granting recognition indifferently to schools of architecture associated with institutions of varying status must, I suggest, be to leave the public in some doubt as to the status of the profession itself. Here again it is not enough to assert robustly that architects can afford to be judged by what they do in practice and by that alone. What is involved is not the reputation of individual architects but the reputation of the profession as a whole. That general reputation is bound to be affected by the measure of confidence which the public has in the kind of institutions that are entrusted with the task of educating the profession. Now it is an incontestable fact that the public—with good reason—reserves its greatest regard for the Universities as instruments of professional education. The proof of this is evident in very many ways—in, for example, the almost hypnotic effect which an academic degree can exercise on a lay committee making an official appointment. To minimise the significance of this would be foolish. For the public, largely through its elected representatives on national and local authorities, has become the grand commissioner of architecture. The extent of the opportunities that will be given to architects generally must depend on the confidence reposed in the profession as a whole. If the profession is to be permitted to serve society as fully as it should, this question of confidence becomes then extraordinarily important. And its implications as far as architectural education is concerned should be frankly faced.

At this point, you may be asking yourselves, if you have not done so already, what purpose is served by holding an inquest on the consequences of a policy which cannot now be reversed? The Institute has already granted full recognition to a number of schools which are not established in Universities; these schools include some of the best in the country; it is unthinkable that recognition should be withdrawn from them as long as they maintain their present standards; and there is no reason to suppose that they will not continue to uphold them indefinitely. What is the good then of labouring arguments when the time for acting upon the conclusions which emerge from those arguments is long since past, when, in short, nothing can be done about it at all?

If that were true, I should certainly not have been justified in discussing the issues that I have raised. But it is not true. Something can be done about it. Constructive measures can be taken to retrieve a situation that should not be regarded as having been lost; and they can be taken not only without prejudice to the Recognised Schools at present unconnected with Universities but through the initiative of those schools themselves. The way has already been pointed by the Glasgow and Welsh Schools of Architecture. The former, established in the Royal Technical College, Glasgow, provides a qualifying course which leads to a degree in architecture that is conferred by the University of Glasgow. The Welsh School, a Department of the Technical College, Cardiff, is associated with the University of Wales through a newly-created Faculty of Architecture. It, also, has instituted a degree course. Here, then, are two actual examples of what can be done under favourable conditions when there is the will and faith to do it. If the other non-academic schools were to follow the precedents set by Glasgow and Cardiff, the first stage would be achieved in a process which should not stop at that. The ultimate aim of each of these schools should be, by whatever methods might be most appropriate—and these would no doubt vary in every instance—to secure incorporation within a University. For this again precedents can be found in some of the University schools which were at one time administered under joint municipal and academic auspices before coming entirely under academic control. Admittedly, there will be obstacles to be surmounted, obstacles which will no doubt be more serious in some places than in others. A local education authority may not at first be easily persuaded to take a generous view and to acknowledge that architectural students will enjoy advantages in the environment of a University which the

authority itself cannot hope to provide. A University may not at once be ready to accept additional commitments. But these are difficulties which have been overcome in the past and which it should be possible to overcome in the future. And in the negotiations that will have to be undertaken the R.I.B.A. may well have opportunities of playing the part of honest broker and in that capacity of exercising a most helpful influence.

When all the Recognised Schools have acquired the status that is due to them, architectural education will at last have been placed upon the plane on which it should consistently rest and be known to rest. The advantages that will be secured as a result will not be limited simply to the schools; they will be experienced by the profession as a whole.

I come now to discuss some of the more urgent needs of the Schools, needs which must be satisfied if architectural education is to be as fully developed as it should be in future. These needs may be considered under two main heads: one staffing, the other accommodation and equipment. I will begin with staffing.

Architectural and medical education compared

We are wont from time to time to draw parallels between the professions of medicine and architecture because, despite all differences in the nature of their respective activities and in the services which each performs for society, there are obvious similarities in the development of their systems of education, in the systems themselves and in the corporate organisation of the two professions. In medicine the phase of education through pupilage or apprenticeship is finally over: in architecture it is passing. In both medicine and architecture the majority of the schools entrusted with the responsibility of qualifying students are established in Universities. Here again the medical profession has enjoyed the advantage of a longer start in the business of putting its educational house in order. To-day four only of its qualifying institutions are of non-academic rank; and in the recent Report of the Government's Inter-Departmental Committee on Medical Schools it is recommended that these four be either absorbed in Universities or abolished. The curricula of both medical and architectural schools covers a wide range of subjects and in both the qualifying course is a long one—six years for medical students and five for students of architecture. In each case the curriculum comprises in addition to theoretic studies a period or periods of clinical or practical experience. Finally the professions themselves have each been given a statutory position with powers and responsibilities in regard to registration that are in many ways similar.

It is relevant, therefore, and also instructive, to compare the establishments of medical and architectural schools. Three examples will suffice to show the scale on which representative medical schools in Great Britain are staffed. In the University of Glasgow the Faculty of Medicine includes twenty professors and seventy-three lecturers; in the University of Leeds twenty professors and fifty lecturers; and in the University of Liverpool fifteen professors and forty-six lecturers. These figures do not include demonstrators and other assistants of whom there are a considerable number in all Medical Schools. A Recognised School of Architecture with more than one professor is exceptional; a few have a second professor in charge of a post-graduate Department of Civic Design or Town and Country Planning. Occasionally a Recognised School may count amongst its whole-time staff two or three members with special qualifications and responsibilities who may be styled associate professors, readers or senior lecturers. Normally, however, the entire non-professorial staff consists simply of lecturers and studio instructors without further differentiation in title. It is rare even for a University School to possess a full-time staff of more than fourteen; though it may be able to call upon the services of professors and lecturers in other Faculties, such as those of Arts, Science and Engineering, as and when required.

Admittedly the number of medical students at Glasgow, Leeds and Liverpool has in each instance always been considerably greater than the number attending any of the Recognised Schools of Architecture. (The figures for the last peace-time session, 1938-39, were: Glasgow, approximately 1,000, Leeds 503, Liverpool 445. Whilst the maximum number of full-time students registered in a Recognised School of Architecture for that session was 275.) It must be conceded also that the departments of medical knowledge in which separate teaching is required to-day are more numerous than those for which a similar claim could fairly be made in the case of architecture, extensive as the whole field of architectural education is. It must, furthermore, be granted that a high proportion of the teaching appointments in medical schools are in effect on a part-time basis, and that this circumstance has in the past facilitated the necessary expansion of staffs—though here it should be noted that the tendency in medical faculties is now toward converting an increasing number of part-time into full-time appointments.

Staff: the need for more Professorships

But when every allowance has been made, the disparity between the establishments of medical and architectural schools is very much greater than it should be. Subjects which are as fundamental to architecture as anatomy, physiology and pathology are to medicine have no chairs specifically devoted to their study and exposition in most of the Recognised Schools. A single professorship of architecture is still in some quarters thought to be all that is required. In the initial establishment of an architectural school a single chair might be all that could be contemplated at the time when the school was founded; and one chair is certainly better than none. But the provision of other chairs in the Recognised Schools is now long overdue. The History of Architecture, The Theory of Architecture, Construction and Building Science, these are subjects whose scope and importance justifies the appointment of a separate professor for each.

History and Theory

A cardinal place is given to the History of Architecture in the curricula of all the Recognised Schools. It is right that this should be so, for a knowledge of the history of his art is one of the things that differentiates the architect from the technician, that distinguishes him as a person of liberal education from a man whose interests are purely technical. Despite this fact there is no Chair devoted to the study in any of the Recognised Schools in Great Britain. The teaching of the subject has therefore to be entrusted to members of the ordinary staffs of the schools, whose other obligations may be considerable and whose original work is more likely to be in the field of actual practice than in that of historical research. These teachers have little opportunity to make themselves masters of historical method and still less encouragement to do so.

Few new contributions consequently are now being made to knowledge in the province of architectural history. Occasional studies are produced by scholars working independently or under the auspices of bodies devoted generally to the History of Art—like the Courtauld and Warburg Institutes and the Barber Institute of Fine Art in the University of Birmingham. Occasionally also the chair of Fine Art in the University of Edinburgh or the Slade Professorship at Oxford or Cambridge may be occupied by an architect or by someone who is interested in architecture; but architecture is not the main concern of these foundations, and circumstances might arise in which the history of architecture would be entirely neglected by them.

Without a steady flow of new and original work the subject must become stagnant, to the serious detriment of the routine teaching in schools of architecture. There is clearly, then, an urgent need for the establishment of a chair of Architectural History in each of the Recognised Schools to encourage the production of original work and to provide, within each school, the best and most authoritative teaching in the subject itself. In a University it might well be that the professor appointed would be called upon to offer supplementary courses in other Departments, such as those of History and Literature, and so

would have opportunities of promoting that wider interest in and appreciation of architecture which it is so desirable to encourage.

The Theory of Architecture comprehends the study of the nature and aims of the art, its principles and how they may be applied, the analysis of architectural form and the consideration of standards of criticism. It is therefore a subject which may justly be regarded as fundamental in any systematic course of architectural education. Yet it must be confessed that it does not appear always to occupy the position which should be assigned to it in a balanced curriculum. For this state of affairs, where it exists, there may be various explanations, though I am persuaded that there can be no adequate excuses. It is a commonplace to say that we are living at a time when the programmes with which the architect is called upon to deal and the resources at his disposal are more complex and varied than they have ever been before. Inevitably such a phase is marked by experimental essays in many directions, some of them intelligent, others not so intelligent. This is a circumstance which may temporarily obscure but cannot change the essential nature of architecture, neither can it invalidate its principles nor the canons of criticism by which it may be judged irrespective of style or period. It has become more, not less important, that architectural students should have clearly presented to them what architecture is, what the architect *qua* architect sets out to do, what are the permanent principles of his art and what are merely its contingent rules. These and other theoretic issues require systematic exposition by one who is a master of his subject, competent to present it in both its historical development and its contemporary aspects and able to participate authoritatively in the critical work of a school. As with the History of Architecture so with Architectural Theory the importance of the subject and the qualifications required in the person to be entrusted with it alike call for a professorial appointment.

Construction and Science

Construction is accepted as an essential subject in the qualifying course of every Recognised School. Lectures and studio work in it extend throughout the full five years of the curriculum and cover both traditional building methods and those developments in structural systems and technique which have so profoundly influenced architectural practice since the middle of the nineteenth century. So much stress is, indeed, laid to-day on the study of construction in all the schools that it is scarcely necessary to argue the case for the establishment of a chair on the subject.

The study of Building Science, that is of the physics, chemistry and uses of building materials, has become increasingly important. In the course of the present century the material resources of architecture have been greatly enlarged and extensive investigations into the properties and behaviour of both old and new materials have been conducted by such institutions as the Building Research Station and the Forest Products Research Station. A large body of data now exists which has yet to be systematised for the purposes of teaching as well as of practice; whilst the opportunities for further investigation and experiment are virtually unlimited. In view of the facilities which the Universities are especially well-placed to afford, the creation of a Chair of Building Science in each of the University Schools should result in valuable contributions to knowledge being made in this field, with consequent benefits to teaching and to the advancement of architecture itself.

In discussing the need for the institution of professorships in the foregoing subjects in all the Recognised Schools, I have deliberately placed the History and Theory of Architecture before Construction and Building Science and have stated the case for them at greater length, because Science, in both its pure and applied forms, has the force of a *mystique* to-day. The claims of technical studies require no special emphasis in the increasingly mechanised age in which we are living; they tend to be granted as soon as they are formulated and often before they are understood. For this reason it is probable that chairs in Construction and Building Science will be the first to be added to the establishments of the Schools. And if that should happen it will be very necessary that the proper balance of the curriculum be maintained. It must never be forgotten that the applied sciences are part of the means of architecture; they are not its end. A school in which technical values came to be considered as more important than æsthetic might become a successful school of engineering; it would certainly lose its right to be regarded as a school of architecture. I make no apology, therefore, for the order in which I have placed the studies that should be represented in every school by separate chairs.

These four chairs I have assumed to be additions to the establishments of schools in which there is already a professor of architecture. Where this would not be the case obviously the first need is for the creation of a chair of architecture itself. The primary concern of the chair will normally be the subject of architectural design, the most important of all the studies comprised in the education of the architectural student. Because of the scope of that study, because creative activity in design draws upon every department of architectural knowledge, it is appropriate that a chair devoted to its direction should be called a chair of architecture, rather than a chair of architectural design. The latter title may be interpreted in a narrow, restrictive sense with unfortunate consequences in teaching; the more comprehensive designation is therefore preferable.

Civic Design and Town Planning

I have already referred to the fact that a few schools actually possess in addition to a chair of architecture a second chair of Civic Design or of Town and Country Planning. It would seem probable that the number of schools so provided may shortly be increased and that we may reasonably look forward to a time when every Recognised School will have its own post-graduate Department of Planning Studies, with a professor specifically appointed to co-ordinate and direct its work. This is much to be desired; for, if all that is to be done in the reconstruction and development of our cities, towns, suburbs and countryside is to be carried out in a civilised manner, it is indispensable that a sufficient body of architects should be properly qualified to participate in the tasks that lie ahead. Those who foresee a short life for Departments of Planning Studies and who consequently prophesy an ephemeral existence for chairs of Civic Design and Town and Country Planning are, I believe, mistaken. Our society does not so swiftly dispose of its problems; nor do the solutions of one age meet all the needs of the next. The necessity to pursue advanced planning studies will surely always be with us.

Universities are more likely than any other institutions to possess or to become possessed of the financial means necessary to found the chairs that are required in Schools of Architecture. Apart altogether from their existing resources the increased grants recently made to the Universities by the Treasury and the prospect of still more generous allocations in the future have greatly strengthened their position in this respect. In any case they can offer incomparably the best conditions and facilities for the conduct of professorial work. And, given the nucleus of a group of three or four chairs, a University School might justifiably be raised to the rank of a Faculty, with all that that would imply in enhanced prestige and authority. These, I submit, are considerations which powerfully reinforce the arguments in favour of the absorption of all the Recognised Schools in Universities.

Whole-time staffs: conditions of employment

To turn now to other requirements in the staffing of the Schools. Within the limits of this paper I cannot attempt to do more than mention some of the most conspicuous. In the forefront I would put the need for ensuring that the positions of major responsibility on the staff of a Recognised School should be whole-time appointments; whether those appointments be concerned with administration or with teaching, whether they

be of professors, lecturers or studio instructors. Supplementary part-time assistance can be well worth having, but in fundamental subjects, at least, a school should consolidate the majority of its appointments on a full-time basis. For on no other terms can it build up and maintain a consistent and well-balanced educational policy. The settlement and carrying out of such a policy can only be undertaken by teachers who are closely and continuously associated in a full-time capacity. Whilst the value of the contributions which can be made to the work of a school by the holders of part-time appointments is not to be underestimated, the control of architectural education must, if it is to be properly directed, remain in the hands of those who are prepared, as full-time teachers, to make it their chief concern.

For architects of ability and with the requisite qualifications to be attracted to the full-time service of the schools three conditions must be secured. In the first place they must be free to engage in private practice in so far as this does not conflict with their obligations as teachers. Secondly, once they have proved their fitness to teach, they must enjoy reasonable security of tenure. Thirdly, both their remuneration and the rates of pension to be offered to them on retirement must be adequate. Of these three conditions only the first can be said to be generally fulfilled to-day. Though the Universities have always taken it for granted that teachers of architecture should be on the same footing as teachers in other fields and be expected to contribute to the advancement of their own subject by doing original work in it, this has not invariably been the attitude of the authorities governing schools of architecture in non-academic institutions. It has been due in no small measure to the influence of the R.I.B.A. that a more enlightened view has come to prevail in these quarters and that it is now universally appreciated that architecture, as a creative art, cannot be properly taught by those who are debarred from practising it. Unhappily the position regarding tenure, remuneration and pensions is, as we all know, still far from satisfactory. Whilst the Universities again do offer stable conditions of appointment to teachers of proved capacity, in too many schools in other institutions even senior posts are held on precarious terms ; and that is certainly not good either for those who hold the posts or for architectural education itself. As to salaries and pensions, in none of the Recognised Schools are they on a scale that is commensurate with the exacting work and responsibilities that are involved in teaching, nor do they sufficiently reward the special abilities that must be brought to the service of architectural education. The consequences are that many good teachers are lost to the schools : some of them on a survey of the prospects, reject all idea of taking up educational work ; others after spending some years as members of the staff of a school leave to devote themselves entirely to practice just when their powers have matured and when the experience they have acquired makes them most valuable as teachers. It is inevitable and normally desirable that the composition of the staff of a school should change from time to time. But the cause of such changes as do occur should never be unsatisfactory conditions of tenure, remuneration or pension. And those are the causes that are chiefly responsible for the difficulties with which the schools have still to contend in recruiting and retaining their staffs. Reform in these matters is urgently necessary for the future welfare of architectural education.

There are two more needs common to most of the schools which I would mention here. First, their staffs require to be expanded sufficiently to permit them to develop the tutorial system considerably further than they have yet been able to do. This is especially necessary in regard to studio work. Those who are immediately responsible for supervising this work should be genuinely tutors, not merely instructors. (Incidentally, the term " studio instructor " is a survival from the past that might now be more appropriately replaced by the title " studio tutor.") Too often the number of students with whose studio work a single teacher is concerned is so large that the teacher is faced with two equally unsatisfactory alternatives : either he must neglect the majority and concentrate on a favoured few or he must spread his attention thinly over the whole body. The sooner all schools are staffed on a scale which will eliminate this dilemma the better. Actually no teacher should be expected to supervise the studio work of more than twenty students. But, if that is to be accepted as the maximum, as it should be, it will mean an appreciable increase in the establishments of some schools.

Demonstrator of building processes and crafts

The other need which I would stress is for the teaching staff of a school to include a competent demonstrator with a sound knowledge of building processes and of craft-work generally. A single full-time demonstrator could not be expected to cover all the trades ; further aid from outside sources would also have to be sought. But the holder of such an appointment would be in a position of special responsibility, charged with the maintenance of all technical exhibits and plant, and constantly in attendance. Provided that he had the requisite capacities and was furnished with the necessary materials and equipment, he would be able to render invaluable service on the technical side of the curriculum. For all experience has shown that from observing how materials behave under tests and from seeing how things are done in approved building practice, students are able to learn much that they cannot get either from lectures or from descriptions and illustrations in text-books.

I have discussed—very inadequately—some of the needs of the schools in so far as they relate to staffing. My references to certain of their more pressing requirements in accommodation and equipment must be even briefer.

Premises

With two or three exceptions, none of the Recognised Schools in this country can be regarded as being worthily housed. Most of them occupy buildings whose architectural character is at the best indifferent and at the worst deplorable ; and in few instances is the accommodation afforded either adequate or suitable for the purposes for which it has to be used. Sometimes the staffs of schools which are the worst off in these respects are assured by their governing authorities that all is well and that they have no serious reason to complain. Or they are told that the handicaps under which they labour should operate as spurs to high endeavour. Much fine work, it is asserted, has been produced by enthusiasts who have struggled with still more adverse conditions. The fear has even been expressed that, if better facilities were to be provided, both teachers and students might be in danger of becoming enervated!

It has, indeed, proved extraordinarily difficult to persuade the authorities of some of the institutions concerned that a school of architecture is not satisfactorily housed when it occupies makeshift premises, and that the quality of the architectural environment in which students work really is a matter of some importance. However, before 1939, there were already welcome signs that the persistent representations of some of the schools—representations often reinforced by the Reports of the R.I.B.A. Visiting Board—were beginning to bear fruit. More than one school had reasonable hopes of finding itself in better quarters and might already have been installed in them, but for the war. Now there must be still further delay in implementing the promises that have been made. Nevertheless the prospects generally are more encouraging than they were.

It may be thought that the ideal home for a school of architecture would be a traditional building that would itself serve as an exemplar of civilised architectural form. In some schools such a building is either the nucleus of or an adjunct to their present accommodation ; and in either circumstance its influence may be of incalculable value. But the major requirements of a fully developed school cannot be adequately met by trying to adapt to its special needs the structure of an older fabric designed originally for other purposes. Inevitably more is lost than is gained in the result. To appreciate that this must be so, it is enough to list the principal elements of the accommodation necessary to the proper functioning of a qualifying school. They comprise a range of large studios, a main lecture theatre and supplementary lecture rooms, a library, galleries suitable for the

display of building materials, constructional models, standardised units and samples of equipment, a laboratory or laboratories and workshop for testing and demonstration purposes, galleries for the examination and assessment of studio work and for the delivery of criticisms, provision for visiting exhibitions, administrative quarters, staff rooms and accommodation for a self-contained post-graduate Department of Planning Studies. It is obvious that to provide all this, together with its ancillary accommodation on anything like an adequate scale, to ensure that it is all well lighted and conveniently arranged, a new building or group of buildings, planned with these ends in view, is required.

Excluding those few schools which already possess the greater part of the accommodation that I have mentioned the rest suffer from a variety of disabilities : some have insufficient studio space, others lecture rooms which are either too few or too small or both, others libraries which can be only so called by courtesy ; and others again are without separate rooms in which studio work can be conveniently hung, assessed and criticised. But the commonest deficiencies are the lack of suitable galleries for the display of materials, constructional models and equipment, the restricted range of exhibits that are consequently available to students, and lastly the absence of a workshop and laboratory in which building processes and craft-work and the properties and behaviour of materials can be demonstrated to students. No school yet possesses the resources which should be at its disposal either in gallery space or in workshop and laboratory accommodation. In any scheme of future expansion—whether it is to take the form of a completely new building or of extensions to existing premises —these shortcomings should be made good, and made good generously.

There is much more that could be said about other needs in staffing, accommodation and equipment, but we have still finally to consider possible future developments in the general educational policy and teaching of the schools and I must therefore pass on to this last aspect of my subject.

Recruitment of students

First, as to the recruitment of students. Pre-vocational education is outside the scope of this paper and I shall not attempt a last-minute excursion into that field. But this much may and should be said. A broad general education, using that phrase in its full liberal sense, is the best preparation for architectural studies ; and the longer—within reasonable limits—that education can be pursued the better. During the war all the Recognised Schools have felt it necessary to lower the age of admission to seventeen. But it should soon be possible to revert to the more reasonable figure of eighteen ; and if it can be made nineteen, so much the better. Very few students are sufficiently mature at seventeen years of age to enter upon a course of higher education in any subject ; and, even assuming that they are, it does them no harm to be required to continue their secondary school education for another session. How important is this factor of maturity was strikingly illustrated in the years immediately following the last war. Then the Recognised Schools received a large influx of ex-Service students the majority of whom were older than most of the candidates admitted at normal times. Because these ex-Service entrants were in the main adult they assimilated knowledge more thoroughly and were naturally more self-reliant and balanced in judgment than adolescent students could be expected to be. And in consequence they reached higher standards generally in their work. From that it does not follow that the age of admission to a qualifying course in architecture should in future be fixed at twenty-two or twenty-three—the practical objections to such a proposal are insuperable—but the evidence does reinforce the argument in favour of regarding eighteen as a minimum figure, to be raised to nineteen as soon as may be practicable.

If it is desirable that students should be mature enough to benefit by the tuition they will receive in a professional school, it is also desirable that they should be recruited from as wide a field as possible. Schools which attract entrants from a distance generate a more stimulating atmosphere than institutions drawing only upon local sources. Their undergraduate life is more varied and interesting ; it encourages a wider outlook and more generous sympathies and saves those who participate in it from the danger of becoming provincial in the prejudicial sense. This is especially true when the student-body of a school includes a fair proportion of recruits from overseas—Dominion, Colonial and foreign. The contribution which such students can make to the life of a school is particularly valuable. As this is now generally appreciated, it may fairly be assumed that every Recognised School will in future aim at establishing not merely a national but an international reputation.

Five years or less

Occasionally one hears the opinion expressed that the length of the qualifying course in the Recognised Schools is greater than it should be. Five years, it is sometimes said, is too long ; three should be enough in which to instruct the student in the fundamental principles of architecture, to give him adequate opportunities for applying those principles in exercises in design and to introduce him to the study of the history and theory of his art. Beyond that, it is contended, it is not advisable to go. For the rest is a matter of factual and technical knowledge so multifarious and so wide in its scope that it can only be acquired in the course of a life-time's experience of practice.

In reply to this it must be said that the fully Recognised Schools have all found that, for the study of design to be pursued to a sufficiently advanced stage to justify the award of a professional qualification, a course extending over five years is indispensable ; and that in no shorter period can adequate foundations be laid in other subjects comprised in the curriculum. Though teaching in every subject has not to be maintained throughout five years (courses in some subjects may run through no more than one or two sessions) experience has conclusively shown that the full range of qualifying studies cannot be covered in less than the time now allotted to them. If that time were to be reduced the consideration of important elements of the curriculum would of necessity have either to be unduly compressed or eliminated altogether. It is true that the body of technical data relating to construction, services and equipment is vast and is still expanding. But the purpose of organised study in these fields is not to make the student omniscient ; it is to enable him to master structural principles, to concentrate on what is essential in good building practice and to acquire the basic knowledge necessary to use intelligently the resources of applied science now at the disposal of the architect. So much may be accomplished in five years ; it cannot reasonably be attempted in three. Whatever happens, therefore, the Recognised Schools are, to say the least of it, unlikely to consider any suggestion that the qualifying course in Architecture should be reduced in length.

Possible developments

Accepting, then, five years as the irreducible minimum for purposes of qualification, what developments may be anticipated in the course itself? I believe that we may look forward to a number, for architectural education is never static and can never reach finality.

Historical studies in some at least of the Recognised Schools have in recent years suffered what may not unfairly be described as a partial eclipse. The reasons for this are too well known for it to be necessary for me to state them. But it is already evident that the study of architectural history is beginning to be restored to the place which it should occupy in the education of architects, if they are still to justify their claim to be regarded as members of a learned profession. The process of restoration is by no means complete, but the omens are propitious. For, to adapt words once used in another context, it is being increasingly apprehended that for architects " the study of historical continuity is not only a duty, it is a necessity."

Developments in the teaching of architectural construction and of what is termed " building science " may be expected also to occur. The tendency to place greater emphasis on

scientific principles is likely to become more marked and may have far-reaching consequences—though whether those consequences will all be as beneficial as some people think, I personally doubt. In any case, it seems certain that the practical demonstration of the properties and behaviour of materials and of the methods employed in building will play a much bigger part than it has ever done before in the teaching of construction and building science, and nothing but good should come from that. As I see it, the real danger to be feared is that, unless a vigilant control is maintained so that first things continue to come first, the balance of the curriculum may be upset and the true aims of architectural education be subordinated to the pursuit of technical ends. That, however, is a danger which it should be possible to avert provided that it is clearly recognised in advance.

Another development which may be foreseen is the greater use which will be made of the services of practising architects and specialists as external lecturers and critics. Some schools have already enlarged their teaching resources by this means. All of them in greater or less degree may be expected to do so in the future. The chief obstacle in the past has been not so much lack of funds as the dearth of authorities competent and willing to undertake the work involved. As the number of school-trained architects in practice increases, it can be assumed that this difficulty will disappear, for the schools will then be able to draw upon a reservoir of experienced practitioners who, as a result of their education, will know what systematic exposition means and may furthermore be trusted to feel a certain sense of obligation to give such assistance as they can.

And here, at this arbitrary point, I must end my paper. I am very conscious of its defects and omissions. I have not found it possible to discuss such important matters as the place of practical experience in the education of the student, the integration of preparatory studies in town and country planning with the normal architectural course, the fields in which post-graduate work might most profitably be pursued and the provisions that might in future be made to facilitate such work. All this and more I have felt compelled to exclude from consideration. I have confined myself to the aims which I stated at the outset and have attempted simply to set forth some of the primary conditions and needs on the fulfilment of which the future of architectural education depends. For the many shortcomings of my treatment of this limited programme I would ask your generous indulgence.

DISCUSSION

Mr. Darcy Braddell [*F.*] (Chairman of the R.I.B.A. Special Committee on Architectural Education) : It is with very great pleasure that I propose a vote of thanks to Professor Budden for his paper, first because it is a great honour to be asked to do so and, secondly, because I have a great respect for Professor Budden, who is an old and trusted friend of mine. I first met him a considerable number of years ago, when he was Chief of Staff at the Allied Architectural Headquarters at Liverpool, where Professor Reilly was Supreme Commander-in-Chief. At that time I had had relatively very little experience of the working of that system of architectural education which is now almost universal and which we briefly call the Schools, and so it was that my first visit to Liverpool filled me with great interest. I found the School housed in a collection of miserable ramshackle huts, where students of every nationality, colour and creed vied with each other in producing designs for unlikely projects of immense scale and magnitude, which they executed with the most remarkable virtuosity. All this was an inheritance from over the water, for it was on the great classic traditions of the Beaux Arts that Professor Reilly had laid the foundations and built the superstructure of the School at the University of Liverpool, which itself was soon to grow famous throughout the Empire, thanks to the boundless energy and ability of the man who had conceived it and whose ambitions for its place in the realm of international education were limitless.

When I next visited Liverpool the scene had changed. Professor Reilly had retired to enjoy the honours and pension which he had so richly earned, and Professor Budden had succeeded him. He was faced with, I suppose, one of the most difficult tasks that can possibly fall to the lot of any man. Here was one of a naturally retiring temperament and of very obvious academic disposition and outlook on life being asked to replace a great leader of the young, a man of highly effervescent personality, who had been immensely popular among his students, because of the interest he had taken not only in their careers but in their private lives, their amusements and even their love affairs. To make matters more difficult for Professor Budden, he had succeeded to the Chair of Professor Reilly at a time when all architectural values were in the melting pot. To give you some idea of how much they were in the melting pot, I remember at the time of my visit a programme which had been set for a monumental staircase to an embassy in foreign parts, and I saw, to my astonishment, a design for a concrete staircase about 8 feet wide, with a solid concrete balustrade and a piece of handrail composed, as far as I could see, of a length of gas barrel which had been cellulosed or possibly covered with aluminium paint. I asked for the author of this design and I told him that I did not think it was particularly suitable for an embassy nor did I think it was monumental, and I ventured to suggest to him that he might have found something which would have filled the bill if he had looked back to the work done during the time of the Italian Renaissance. He looked coldly at me and said : " I do not hold with the Italian Renaissance."

It seems to me, as never more than an outside observer, only appearing on the scene from time to time, that Professor Budden established the foundation of the position he holds to-day and the respect which is generally accorded to him by taking two steps of great importance. Together with his partner, Mr. Marshall, he built the new School building and, in addition, the Students' Union. Professor Budden has told you how inadequate most school buildings are, but these buildings gave visual proof to his students that their headmaster was a good architect and they told them something of what their chief stood for, because the buildings are logically planned, spacious, well constructed and equipped, and expressed in contemporary idiom. They are, in fact, a reflection of Professor Budden's eminently logical mind. The other step that he took, in his capacity of professor, was to institute a series of brilliant lectures, which he gave himself, on the theory of architecture, a subject which he felt was more important then than it had ever been. I did not have the advantage of seeing a copy of the paper which Professor Budden has read this evening and I knew nothing of what he was going to say, but he has already given you his own opinion about the importance of this matter and the necessity of a professorship at a university to deal with it, and I am in entire agreement with him on that subject.

In a very short time there will be published the Report of the Special Committee on Architectural Education, of which I have had the honour of being chairman. I must not divulge its contents now, but I can tell you this, that all the way through there is driven home the doctrine that architecture is primarily an art and that, in spite of the endless complexities of the technology of which an architect is supposed to be master, he must always remain an artist aware of science and not a scientist aware of art. The great danger, in my judgment (and I am quite sure that Professor Budden shares this fear with me ; in fact, he has told us so this evening) is that we may get lost in this terrible forest that scientific developments and engineering technology have raised about us and which grows thicker and thicker every day. If we are to succeed in our mission, if we are to believe that either architecture is an art or it is nothing, then we have to cut our way out of this tangle, and I do not believe that there is a better way of doing that than by establishing throughout the country what Professor Budden wants, which is a university education for architects, the setting up throughout the whole educational world of seats of learning where persons can have the leisure to think out these problems and to pass on the results to their students.

I feel that Professor Budden has covered the ground so well in his remarkable paper, which is full of facts of the greatest importance and of constructive ideas, that I cannot do better than terminate my remarks by offering him my personal thanks for one of the most interesting evenings that I have spent for a long time.

Mr. John S. Walkden [*A.*] (Head of the Polytechnic School of Architecture) : When the Secretary asked me whether I would second this motion I was full of ideas about architectural education, but I have heard my points covered so thoroughly one by one that, quite frankly, I am left with very little to say. That, as I come from the Manchester School, is, I think, a tribute indeed !

I should like to draw your attention to only two points. The first

is the question of staffing the schools of architecture, a subject to which Professor Budden referred. I feel that unless we are prepared to remunerate our staffs sufficiently the Utopia that has just been held out to us will not be forthcoming. The new salary scales which are being debated at the present time are a move in the right direction, but we shall not get the men we should like to see in our schools unless we can remunerate them satisfactorily.

My second point is this. I have had the opportunity during the war of spending a period in the Edinburgh School of Architecture, now the Polytechnic. There has, I think, been a suggestion that architectural students have deteriorated somewhat during the war. Will you please take it that that is not so? I feel that there has been a very marked advance not only in the teaching but in the work that the students have been doing.

With those very few remarks, I will say what a great pleasure it has been to me to hear the address this afternoon and that I second the motion with delight.

Mr. Basil M. Sullivan, C.I.E. [*F.*]: I should like to support the vote of thanks to Professor Budden for what I am sure all of us have found a most interesting paper, expressed in the vivid English which those of us who know the author would have expected.

Architectural education; indeed, all education, like so much else in our lives nowadays, is not only under review; it is on trial. It is being examined; it is being questioned, and that is all to the good. Should it be purely scientific or purely artistic, science imbued with art or art with a dash of science? Have we, in making the strides in academic teaching in the last twenty-five years, lost anything in the consequent giving up, or partial giving up of the pupilage system? Should we concentrate on a comparatively small number of great schools, strategically situated in Great Britain and Ireland, with the advantages of staff, accommodation, and such like, which they must possess over the small school which cannot afford to provide them; or does this tend spiritually and mentally to starve the small town, by reason of its young men and women being drawn away from it, remembering that many small towns have their ancient traditions and culture and their proper pride and remembering too that many new towns are arising which will aspire to such qualities? Should we steadily and consciously strive so that, eventually, all our architectural education is whole-time and, if so, should it be given in universities or schools linked with them, or should we recognise that for a very long time there will be a need for part-time education and external examinations and continue to provide for this need? These are a few of the questions which arise. On some of them the R.I.B.A. and the Board of Architectural Education have expressed their views and laid down policy, and on some of them they have not. I, as an individual, have my own views like everyone else on these matters, but, Mr. President, as Chairman of the Board I am expected to be impartial, so I must refrain from expressing them until my tenure of the chairmanship of that office has safely expired. Nevertheless, these questions, and others arising from Professor Budden's paper will, I imagine, come before the Board, where, no doubt, they will be hotly debated before final decisions are made. I hold that to be a healthy sign of virility; I would much prefer these matters to be hotly debated than to be treated with indifference.

Virility; may I say a word about that? One occasionally hears the R.I.B.A. and the Board accused of being stick-in-the-mud. I am, as you know, a practising architect, but have been in close and intimate touch for five or six years with the Board of Architectural Education, and have been surprised at the active interest taken by the members of the whole profession in architectural education and their wide knowledge of its really complex working. I was led to examine the reason for this, because the American Institute of Architects finding, I think, a divorce of their practising members from their system of architectural education, asked for a description of our methods and it fell to me to expound them. In doing so it seemed clear that the virility lies in these facts:—

The Board of Architectural Education consists of a group of practising architects, heads of architectural schools, and representatives from the universities, the building trade, and other interests. The Chairman is always, I think, a practising architect, with previous long service on the Board, so that before he undertakes his duties his purely professional outlook is informed and reinforced by some years of close contact with the teaching side of the profession. The Committees working under the Board are also mixed. They are selected from heads of architectural schools and teachers of architecture, associated with practising architects, who are selected from the main body of the R.I.B.A. In the Visiting Board and among examiners and moderators and throughout the system, we find the teaching architect and the practising architect thrown together. From all over the country practising architects join the Board and their academic brethren for a period and then, broadly conversant with the aims and problems of architectural education, return whence they came, diffusing the knowledge which they have imbibed through the profession. I think that in its results this educational policy of the R.I.B.A. has proved most successful, both the professional and the academic side profiting by their close contact and combining to produce a balance system. Whatever the future may hold for architectural education, it is to be hoped that this system will continue. I doubt whether there is any better system in any other country.

One further point. The R.I.B.A. has strong educational links with the self-governing Dominions and India. In my view, it would be an advantage if visits were exchanged periodically between architectural educationists in those countries and in this. Such visits should not be spasmodic or accidental and they should be made by trained educationists, sponsored by the R.I.B.A. and capable of studying the trends of architectural education. We should have much to learn and much to contribute. The same applies to foreign countries, but I stress the Dominions and India, because we have very special links with them, as is shown by a study of the R.I.B.A. Kalendar, where they are all set out in the first pages. Of course, I know that in the past we have had great international conferences, but I should like these visits to be more specifically concerned with architectural education.

In what I have said I have deliberately touched very little on the particular matters raised by Professor Budden, but I can assure him that those points raised in his paper which are not already under constant review will be carefully considered by the Board and its Committees.

I should like to join Mr. Braddell and Mr. Walkden in thanking Professor Budden for a most interesting paper.

Mr. Thomas E. Scott [*F.*]: I should like to pay my tribute to Professor Budden for his paper. I shall not presume to deal with any of the detailed points he made when painting a picture of his ideal for architectural education of the future. He referred, at great length and for reasons which he made very clear, to the advantages, as he sees them, of a university education. I will only say that architectural education conducted in other kinds of educational establishments does not suffer from all the disadvantages that he infers.

There is one aspect of architectural education upon which Professor Budden touched at the outset of his Paper and which I think is probably vital to us as a profession, namely, the fundamental relationship between education and the working conditions in architectural practice. I would refer to Professor Budden's suggestion that the age of entry should be 18 or preferably 19, which provides a qualifying age of 23 or 24. He expressed the hope that one day all entrants to the architectural profession will enter it through a fully recognised school. That would entail serious consequences which we as a profession must face. One vital consequence would be that no personnel would be available in the offices of architects unless and until they were fully qualified; in other words, we should be on all fours with the medical profession, to which Professor Budden referred. That we may all accept as an ideal and something we should very much like, but if ever we reach that state of affairs architects might find themselves in somewhat difficult circumstances, because in almost every architect's office throughout the country younger persons are employed and have a very definite job of work to do. I am not pleading for articled pupilage, which I hope is dead, but I am suggesting that as a profession we have to face boldly up to this problem of supplying and training all grades of assistants needed in architects' offices. If we are able to secure that all qualified members of the profession are trained in the schools, there may grow up a body of partially trained unqualified personnel who can never obtain membership of the R.I.B.A. because the Institute examinations will have disappeared. We shall then have lost much for which we have striven in the last ten or fifteen years, and we may find ourselves a divided profession, with a super-class of qualified members of the R.I.B.A., and a slave class of people who come into the profession in another way. I have probably painted the very worst side of the picture, but I have done so in order to draw attention to what I firmly believe is a real problem. If the Institute does aspire to that state of affairs when all architects shall be trained in a fully recognised school, then we must at the same time be prepared to accept the condition that none shall be employed in the profession unless he is as fully qualified as we believe every member of the medical profession is required to be. If, however, the Institute in its wisdom decides that such a state of affairs is not within the bounds of practical possibility, there arises, I submit, the other problem of trying to determine some sort of balance between the school-trained architect and the architect who, for a variety of reasons, enters the profession through an office and is trained by means of practical experience and part-time or evening study. It will then be for the Institute to satisfy itself that such a man or woman, although travelling a sometimes longer journey, ultimately becomes qualified, with an adequate education over which the R.I.B.A. will exercise the same care and control as it exercises over the recognised schools.

I am not criticising the paper, as I am sure you will appreciate. I am merely drawing attention to an important problem of architectural education and recruitment which I am sure we are bound to recognise sooner or later.

Mr. A. B. KNAPP-FISHER [*F.*] : I should like very briefly to support the vote of thanks to Professor Budden. It is very pleasant to be here again and to see him after nearly six years. He is certainly an example of the virility of which the chairman of the Board spoke just now.

One point which strikes me in the paper and in the Report which will soon be before members of the R.I.B.A. is the thoroughness with which they have been prepared and the obvious sincerity which lies behind all the work which has been done for architectural education during the war. I think you will find that the Report will prove to be very much what the address this evening has been, that is to say, a combination of knowledge and great experience plus a great deal of common sense. I doubt whether any profession has produced anything comparable with this Report, and it is an answer to those carping critics to whom Mr. Sullivan referred, who are always springing up like weeds to ask : " What is the Institute doing ? " I hope that all schools will constantly have the ideal of education before them rather than the idea of instruction. Our motto should be " From within outwards " rather than " From without inwards." One cannot keep a bottle corked very long. A bottle of beer is no use unless it is uncorked, and we want to draw out the student. I have been interested in young people for a long time, and I think it is true to say that the average young person needs bringing out ; he is shy and reticent. Therefore education rather than instruction should be our aim.

I hope very much that in the post-war days the crafts will not be belittled and that students will be encouraged to study the crafts connected with building. Tradition, as we all know, is not a dead hand, rigid and strangling, but a stream of ever fresh inspiration. I would even wish that the schools might indulge occasionally in a little of the spirit of the baroque ; I think it would do them an immense amount of good.

With these very few remarks I have very great pleasure in supporting this vote of thanks.

Mr. STANLEY C. RAMSEY [*F.*] : I should like to add my tribute of thanks to Professor Budden for coming here this evening. As a member of the Committee on Architectural Education, I know what an immense debt we owe to Professor Budden for undertaking the editorship of the Committee's Report.

If I have one little regret (I may add that I have known Professor Budden as student, chief of staff and professor), it is that he did not develop, as he might have done and is so adequately fitted to do, the aims of education. He had such an immense field to cover in his survey and he dealt with his fundamentals so thoroughly that I do not think he had time to deal with this other aspect of the subject, but, after all, it is the finished product that we want. I cannot help feeling that overstress on the academic side has its dangers. I had the advantage or the disadvantage of being educated at a university school, and I know that when I first went there I felt the chill of the academic side. In order to balance it, I spent two or three evenings a week splashing oil on canvas and water colours on paper and wasting a good deal of useful material. I feel that it would be an advantage if we could get some of the spirit of the art school into the universities.

Mr. A. F. B. ANDERSON [*F.*] : I should like to ask what Professor Budden considers to be the optimum number of students in a school of architecture.

I should also like to know Professor Budden's views on the sound film as an educational medium in the teaching of architecture. It seems to me that sound films, as an aid on the practical side of instruction, are one of the first needs of the recognised schools and are a matter on which the R.I.B.A. could assist.

I should like to add my tribute to Professor Budden for his interesting address.

Mr. A. STEELE [*A.*] : I feel that Professor Budden in his very admirable paper has been deliberately provocative, and, as a Scot, I must be in the belligerent camp immediately. It is a national characteristic which we are permitted to develop on occasions.

I feel that in the continued comparison between the medical profession and the architectural profession we are admitting an inferiority complex. If in our future education we are going in the universities to provide every architect with the title of " Doctor," then we shall have acquired something, but if we try to build ourselves up as pseudo-doctors we shall have defeated the object of training architects, and, in my opinion, anything that will detract from the importance of the title " Associate of the R.I.B.A." or " Fellow of the R.I.B.A." is to be deplored. I find that societies and public bodies accept this standard of education as something by which to judge architects, and if we introduce the complication of university degrees we shall confuse the public mind, which is where architectural education really begins. Architectural education is a much wider subject than merely the training of architects ; it includes the training of the public to appreciate what we do, and I feel that that was to some extent emphasised after the last war. Professor Budden referred to the work and the success of the ex-Service students. It was my great misfortune to be at the Edinburgh School during the period when these men were coming back after four years of trouble and strife, and they wanted a good time. They were given a grant which was inadequate for their financial requirements. Their whole manner of life had been altered through contact with other people, and they did more harm than good in the years they were at the School. They introduced a disturbing element, and I believe that only 2 per cent. of them continued in the profession afterwards, because the public had not been educated to pay them a sufficient salary for their requirements. Inadequate salaries of not more than £200 a year were offered at that time, and the same kind of thing is happening to-day. If we look at the advertisements in the technical Press during the last four weeks we shall find nearly two hundred advertisements for architectural assistants, and the maximum salary offered this week is £600, the average being about £325. That is the field to which our architectural education should be directed. We can produce the architects.

The vote of thanks was accorded with acclamation.

Professor LIONEL B. BUDDEN, in reply, said : I should like to thank Mr. Darcy Braddell, Mr. Walkden and the other speakers for the very kind things which they have been good enough to say.

There is one observation of Mr. Braddell's which I must correct. He mentioned only Mr. Marshall and myself as architects of the new school buildings at Liverpool. Actually Professor Reilly was associated with us in that work and took a fatherly interest in it.

About the optimum number of pupils in a school of architecture, I can only give you my personal view. I would not venture to suggest that there is a maximum which should be established for all architectural schools ; but about 220 seems to me to be a fairly satisfactory figure. With that number all the members of the staff can get to know the students and a certain intimacy of atmosphere can be preserved. If the total is much above 220 I think there is a danger of a school becoming an impersonal institution. At Liverpool it is our intention, when we have discharged our obligations to the 350 or more of our students now in the Services, to revert to 220 as our maximum.

As to sound films, I believe that they can be very useful as instruments of education. We have occasionally had the opportunity, like other schools, of showing such films. The advantage of a film is that one can stop it, repeat portions at will, and so concentrate attention on particular aspects of the subject which it illustrates. A library of sound films could, I am sure, be an extremely valuable addition to the teaching resources of a school.

Mr. Steele said he hoped that degrees in architecture were not going to be generally recognised. But they are already accepted as professional qualifications—and, for the reasons which I gave in my paper, I think it is very desirable that the public should increasingly appreciate the part which the Universities are playing in the education of the profession. The larger that part is and is known to be, the better, in my opinion.

I was surprised to hear what Mr. Steele had to say about the effects of the incursion of ex-Service students at Edinburgh after the last war. The experience of other schools was certainly very different. I have been assured by those in a position to know that most of them look back, as we do at Liverpool, to the years 1919-1924 as vintage years—a sort of Golden Age. And the subsequent records of the ex-Service students who qualified in that period unquestionably justify that view. A remarkably high proportion enjoy established reputations and hold responsible positions both in practice and in education to-day. I do not know the scale of the grants that were awarded to ex-Service students attending the Edinburgh School of Architecture, but I never heard of any complaints being made by those who qualified for admission to the University Schools.

In conclusion, I should like to thank you all for your patience and consideration. I am afraid that my paper was a very long one.

BUILDING PLANT

A Paper read at a Meeting, held on 18 April, organised by the Architectural Science Board

R. M. WYNNE-EDWARDS, O.B.E., D.S.O., M.C., M.Inst.C.E.

I have been asked to lecture this evening on Building Plant and I have chosen to look at the subject from the widest possible angle and to attempt to show the relationship between building and plant. It is a big subject to cover in a short time and therefore I will ask your forgiveness if some of it is rather sketchy.

To avoid confusion I want to define building plant as tools and mechanical devices of every kind connected with building, whether they are inseparable from a process like welding plant or many-purpose tools like a hammer. That may seem a wide definition, but I hope to show you why it is impossible when considering the relationship between building and plant to accept any narrower definition nor make any hard and fast division between plant and tools used off the building site and those used on.

The Interdependence of Building and Plant in the Past

Ever since man started to build he has been controlled by two important factors : materials with which he could build and ways of shaping and putting these materials together to form a structure. In order to see to what extent these two factors and, consequently, the resulting structure depend on plant, we must put the subject into its proper perspective and begin by looking at building a long way back in time, more than six thousand years ago when neolithic man was living in the country round the Tigris and the Euphrates. Ancient neolithic man had beautifully-made tools of flint and bone, but tools of flint and bone are inadequate for extensive building, not so much because they will not cut—when new they cut reasonably well—but because they soon blunt and break and therefore the building operation is slow. A neolithic community's economy was such that it could not afford to use too many man-hours in building, they were required for other forms of production; so they lived in as simple structures as possible made of reeds and branches daubed with mud and dug holes in the ground in which to store their meagre harvest.

Between five and six thousand years ago man made several important discoveries. He discovered wheel transport and how to harness motive power greater than his own strength, the ox for land, the wind for river and sea. He learned how to irrigate, drain and plough the land, and, most important, he discovered copper, which later he improved by adding tin to make bronze. Now a copper or bronze tool is neither sharper nor harder than a tool of stone or flint, but it does not break nearly so easily and unlike stone or flint not only can it be readily re-sharpened, but if it does break it can be easily recast with far fewer man-hours of work than it takes to make a new stone tool. Lastly, man discovered a most important and entirely new type of building plant, he discovered the use of moulds in which clay could be dried or baked into bricks with flat sides which could be piled one on top of the other. As a result of these discoveries, urbanisation and civilisation began and armed with these new and cheaper tools, a tremendous advance occurred in building. Walls could be built of bricks jointed with bitumen strong enough to carry timbers to span the roof ; new bronze tools were invented for working wood. Man no longer had to live in hovels or holes in the ground, he could build brick houses, granaries and workshops. The possibilities of brick seemed endless and priestly architects planned and successfully built artificial mountains in the middle of the cities for the gods to live in. Some of this learning spread to other communities and a thousand miles away, in another valley, man, besides building in brick, learned to quarry rock and invented new bronze tools to shape it. So he made larger bricks and beams out of stone, the only limit to size being what he could transport and put in place with inclined planes and levers and the motive power he was able to muster. The possibilities of stone seemed endless and he too successfully built, in his flat valley, mountains for his dead king-gods to live in.

We do not know how many man-hours were spent building a ziggurat in Mesopotamia, but Herodotus says it took 100,000 men twenty years to build the Great Pyramid. Now that works out to about 4 or 5 c.ft. of finished structure per man-month, so it is not surprising that bronze-age man soon stopped building pyramids, just as in Mesopotamia he had stopped building ziggurats; his economy could not stand it. Building labour had to be fed by the rest of the community, or the men could not work, and besides they were needed for other, more urgent forms of production, if the community was to live and grow. In other words, the Bronze Age plant which was adequate for the building processes required for making pyramids was inadequate in labour-saving to bring the labour costs down to an economic level.

Bronze age tools, though cheaper than stone, were still comparatively expensive and far from common. Odysseus, referring to the construction of his bed, describes how, with his own hands, he cunningly cut and shaped the bedpost and drilled it with an auger, so that in the late bronze and very early iron age, the chieftain of a clan was not beyond boasting of his skill as a craftsman, and how he himself built his house. However, the next great discovery from our point of view was the smelting of iron and the beginning of the iron age. In 2,000 B.C. a shekel of silver would buy 130 shekels of copper; a thousand years later it brought in 225 shekels of iron, nearly twice as much; so the discovery of iron gave men two important things, tools which were not only much better, but also much cheaper.

The discovery of iron had a very great effect on the history of mankind; among other things it helped to destroy the Eastern civilisation and started a new civilisation in the West. But we cannot digress on to this interesting subject, the important thing to note is that during the last millenium B.C., iron tools, owing to their cheapness, became common, and with the advent of common and much more efficient tools, man's real wealth, *i.e.*, his productivity per man-hour of work, increased. In building not only did the art of working and carving stone rapidly become common so that men could afford to build and ornament their buildings with elaborately wrought stone, but building became still cheaper, and although the farm labourers still lived in hovels, the artizan and city dweller, as well as the rich, could now afford to live in brick or stone houses (often built in rows back to back), and wealthy Seventh Century B.C. Babylonian merchants could afford a two-storeyed house which covered a hundred feet by eighty, and included a bathroom.

The Romans, armed with iron tools, turned their minds to the engineering side of building, like their copper-age forerunners had done three thousand years before. They built roads and bridges, piped water into their cities, and central-heated their houses. They invented two new pieces of plant, pile-drivers and cofferdams, which enabled them to make foundations in water, and a new material, cement, which would set under water. In the third century B.C., Archimedes set mechanics on a scientific basis, and about the same time the pump was

invented; yet, curiously enough, in spite of all these inventions, little scientific progress was made. Roman architects and builders made no startling innovations, they merely amplified what they inherited from Greece; neither did they appreciate the necessity of continuing to increase productive capacity and real wealth by labour-saving. Unlike either the Egyptian or the Mesopotamian, their economy was not an expanding one; instead it was based on the greatest immediate good for the governing class; the rich lived in sumptuous houses and the poor continued in poverty, no new production forces were released. In consequence, by 250 A.D., their prosperity was gone, their economy collapsing, and we must skip on another thousand years and more before we can find the beginning of something new in building.

During this long period the art of building spread, man experimented with new styles and shapes of buildings, existing tools were improved, but that was all. From time to time highly-organised communities arose, which could afford to support numbers of highly-skilled craftsmen and men learned to build exquisitely with what they had ; but no new processes, no new kinds of tools were invented, and no new kinds of materials found. At the end of the eighteenth century man knew little more about building than the Romans, and his scope in monumental building was still limited by his ignorance of how the ground behaves and consequently of how to build foundations to carry heavy loads (not for nothing had Vitruvius set stability first among requisites for good building). Housing was improving, but the well-to-do still lived in comfortable houses and the poor in insanitary ones. In fact, so conservative are we in taking advantage of new things in building that Kipling, a hundred years later, could write

> " How very little since things were made
> Things have altered in the Building Trade "

and not be thought out of date. But Kipling was wrong, a new revolution in building had begun.

Present

Perhaps the greatest factor in this new revolution was the discovery of new forms of motive power, and moreover, power in unlimited quantities. There are others, of course, which are playing an important part, chemistry for example; but overshadowing them all has been the discovery of great new sources of power—power to haul, power to lift, power to drive machines of all kinds. As a result, the entire face of industry has changed, building included, for by applying this power to his various forms of productivity, man has found that he can produce more and so increase his real wealth.

In order to get a picture of the new kinds of building plant that have already resulted from the new discoveries, I propose to review our present facilities under four heads: Foundations, Superstructure, Materials, and Hand-Finishing Tools.

Foundations

The mention of foundation plant usually brings to mind heavy machinery, but perhaps the most important tools are the little scientific machines which enable us to discover what geological formations lie under the surface, and how these strata will behave when we impose a load on them. We can make this investigation by various methods, electrically or by sending explosive shocks through the ground and recording with seizmographs the behaviour of the waves the ground transmits, or, more specifically, by borings from which we can get undisturbed samples of the particular stratum which we want to test, learn its strength, and predict its behaviour under load. These devices and our new understandings of the behaviour of soils—the new science of soil mechanics—are a very great advance in knowledge, because it is at last possible to build with reasonable assurance as to how the foundations will behave after the building is finished. Waterloo Bridge is a good example of a structure that was designed with knowledge of how the London clay was going to behave under the foundations and what settlements could be expected.

Next, let us look at the new processes which we can use in making foundations; probably efficient methods of pumping water and the use of compressed air are the most important. Water in the ground has always been a nuisance, and sometimes an insuperable barrier to making proper foundations. The modern pump allows us to deal with this problem adequately—in fact, the latest refinement, which can be used when the ground is porous, permits us, by driving a ring of pipes into the ground all round the site and using them as wells, to pump all the water out of the ground before we start to dig, and so do the excavation in the dry. Clay presents a different problem, here it is not water, but the tendency of the clay to flow into the excavation that matters. Steel sheet piles are useful for supporting the sides of an open cut, but if the excavation is deep, we can use compressed air to balance the pressure of the surrounding ground; the normal way of constructing such deep foundations through clay or mud or gravel or under water being to sink caissons, large boxes with top and sides, but no bottom, keeping the pressure of the air inside them high enough to prevent the surrounding mud or water from coming in. Another interesting process, applicable when excavation must be done through a fairly small area of waterlogged ballast, is the solidification of the ballast by pumping in chemicals which combine into a solid and fill the interstices, making it impermeable.

Excavation in rock has been enormously cheapened by the use of compressed air for driving the drills, and the invention of explosives for blasting. For excavations in softer materials, much labour-saving machinery has been invented. For surface levelling and large excavations, tractor-hauled scrapers have been developed, which fill themselves as they travel and then carry the load off to the tip. With the larger kinds, one operator can dig and transport several hundred cubic yards of earth a day. Among other useful tools for levelling is the well-known Bull-dozer, which consists of a blade mounted across the front of a tractor, with which the operator slices off and levels the surface. From the earlier steam navvy comes the useful many-purpose crawler excavator. By fitting different booms on the front, it can be used as a face shovel for quarries, a dragline for deep excavations, a skimmer for shallow cuts, and a back trencher for trenching ; it can also be used as a crane. Another kind of excavator is the continuous bucket type, consisting of a series of buckets fastened to an endless chain. Most trenching machines are made on this principle, travelling forwards under their own power as they dig. Both the crawler-excavator (commonly called a dragline) and the trenching machine require transport into which to load the spoil for disposal.

Superstructure

So much for foundations, but before turning to the superstructure, we must not forget transport which plays so large a part in modern building, quick transport of excavated materials away, cheap transport of goods by road, rail and sea, which gives us so wide a choice in building materials and enables us to carry them easily about on the job.

In considering the superstructure we must also consider the materials with which it is built. As in the case of foundations, one of the greatest advances we have made is in our understanding of the nature of our materials. We have invented machines for finding out the strength of any material we wish to use. In consequence, we are in a position to design our buildings scientifically and economically with the assurance that when built, they will behave as predicted and not collapse unexpectedly.

Two new important building materials have so far been added, steel and concrete, both involving new processes in building. By discovering how to make and grind cement finely and accurately and then how to mix it quickly with sand and gravel and water, we have learned how to produce stone anywhere we like in the building, and in any shape we please more cheaply than by using natural stone out of the ground. Furthermore, because steel and concrete happen to have the same co-efficient of expansion, we can reinforce our concrete with steel, not only to

make it much stronger, but also to simplify greatly that difficult problem in building, the making of strong enough joints between the various structural members to carry the load from one into another. Steel, too, has added to our scope in building. Like concrete, it is cheap and strong, we can roll it in any shape we like, and it lends itself to making adequate joints, by riveting or welding. So steel and concrete, both the product of the machine, represent a real advance in building technique.

The machine is coming more and more into use for making new building materials. Bricks and various kinds of roofing materials are almost entirely made by machine. Inside the building the new materials are legion, cheap and well-made glass, synthetic stone, plywoods, various kinds of wall boarding, glass wool for insulating, plastics of various kinds, mastic flooring, to name a few.

Next, let us look at some of the labour-saving devices for handling these materials. Lorries and light easy travelling pneumatic-tyred barrows; fixed hoists for lifting materials up; mobile cranes; derrick-cranes for heavy loads, high lifts or long outreach; derricks which will themselves climb up the steel structure as they erect it. Or we may elect to carry our materials on conveyor belts or pump concrete through a pipe. Building requires scaffolding, and steel has given us light strong scaffolding that can be quickly erected or dismantled, though so far as I know, no one has yet produced the ideal scaffold with a platform quickly adjustable at any height.

Finishers and Small Tools

That brings us to the many powered tools that are now available for use in building, all of them designed to save manual effort. Some are operated by compressed air which can be supplied from a mobile compressor, others by small petrol engines, but the most common source of power is the electric motor, which allows the tools to be run straight off the mains or by current from a small portable generator if the main supply is not yet available. Concrete breakers or clay spades for digging hard ground; rammers for compacting back-filling in trenches; saw benches, powered hand-saws and wood-working machines generally; lathes; saws for cutting pipe, caulking tools, powered hammers, drills, screwdrivers; polishing machines of various kinds, sanding machines, paint sprayers. The cement gun will cover a surface with a mortar of high strength; vibrators will consolidate concrete better and produce a stronger product than manually-operated tools, just as a concrete mixer will make better concrete than can be made by hand—nearly every tool has its powered equivalent.

The picture I have drawn of our present-day equipment is far from comprehensive, but I think it ought to be enough to show what tremendous developments have occurred in the past two hundred years. There is a tendency to be a little bewildered by it all, a steam hammer seems so inhuman compared with the blacksmith's. There is no reason why this should be so, nor is there any reason to think that a man who can use a powered tool expertly should be less skilled than his predecessor with his hand tools. On the contrary, he may well be more so. I have seen crane drivers handling their machines over an excavation with just as much skill as any fisherman ever handled his rod. That seems to me to be the right attitude to have about machines, as machines; neither to feel dominated by them nor to treat them cavalierly, but to think of them as a new and important extension of man's own manual effort, to be looked after as carefully as a good joiner does his chisels and equally rewarding in sense of achievement to the really skilled operator.

Future

We have looked at the past and the present, now let us try to look a little ahead. We have seen that man's ability to build depends to no small extent on the tools that he has to hand. We have seen, too, that new tools and new materials to make them with do not happen every day, discoveries of that kind seem to have taken in the past a thousand years or so to digest and assimilate before the next one was made. Our age is one of the discovery periods and the fact that we do not quite know how to harness our discoveries is quite in keeping with human history. We have invented a large number of new tools, and as a result we have developed many new processes, we have harnessed power and made it cheap and easily procurable and we have not entirely forgotten the essential principle of increased productivity or labour-saving; so we seem to be starting along the right lines. But we cannot stand still—where do we go next? I think the answer is clear enough. We must move towards further mechanisation.

You have seen the thread of economics running all through the history of building. Each time new tools and processes have been invented man's standard of living has risen because with them he was able to produce more with a smaller expenditure of man-hours. The result of each development has been not only that houses grew better, but they also grew relatively cheaper and more people could afford to have them. But the poor people's accommodation has always lagged behind (and remember that the relatively poor have always constituted a very large percentage of the whole community) and the reason is that, so far, building has never been sufficiently inexpensive in man-hours for the community to afford to provide the current standards of comfort for everyone. None the less that must be our aim.

But it can only be done by exploiting the new tools as much as possible. That is the lesson history teaches. Without the machine, unless labour is plentiful and wages low, the product is too expensive. Conversely, for labour to be plentiful, unemployment must exist and when wages are low, the labourer cannot afford to purchase comfort anyway. Modern economics show that labour-saving machinery by reducing man-hours and increasing productivity permits relatively higher wages and so a greater purchasing power. In other words, in order to accomplish more in fewer man-hours and so permit the raising of the standard of living for the worker, increased mechanisation is essential. The same is true of building and failure to make full use of the machine can only be at the expense of the working man.

How do we make full use of the machine? We cannot yet answer that question, we do not know enough about its possibilities. Clearly we must develop the technique of making the most use of machines while the actual building is being erected. But I think we can go further than that. Buildings are erected in the open where men and materials are handicapped by the weather, where conditions at best are not conducive to great accuracy in workmanship, where machines cannot be expected to work to fine limits. In the factory, on the other hand, conditions of work are much more stable, machines can be designed not only to work with much greater accuracy, but also to carry out processes which could not be contemplated in the field. Surely, then, the move will be towards making more and more of the building in the factory and thus reducing the number of man-hours required on the site, where productivity must be lower. There is a move in this direction already. It is spoken of as something new, and called by the rather silly name of prefabrication. There is nothing new in the principle involved. For many years nothing has arrived on a building site that has not been prefabricated to some extent beforehand, and it is only commonsense that if there is advantage in doing any of the work in a factory, the maximum amount that can be done there should be.

What is the architect's relationship to this development? It is easy to say what it might be, but what it will be must depend on the architects themselves. There is one important word in connection with building that I have not yet used and that is beauty, the beauty that results from a well-conceived and well-built building. We want more than stability and utility, we want beauty in our buildings. That we shall go on inventing new methods, processes and materials is certain. It is equally certain that if they prove economical man will want to use them, but unless they are used well the results will be ugly just as the ill-planned towns that grew up in the early nineteenth century were ugly.

Amid all this welter of possibilities in which we find ourselves,

one thing we earnesly need is someone who will integrate them and guide us to build well. But good building does not come by wishful thinking nor by imitating the past; it comes from living in and understanding the present together with a great deal of application and hard work. So whoever would be our guide must first of all neglect tradition and look forward. Incidentally there is a lot of nonsense being talked at present about traditional methods of building; possibly it is sentimentality. At any rate, tradition does not seem to apply to other of man's activities. Wheeled transport and ships have been known to man for thousands of years, and sailing ships and horse transport are far more traditional than steel liners and motor cars; yet who would wish to cross the Atlantic in the *Golden Hind*, or travel to York in a stage-coach ?

To be able to guide necessitates, too, an understanding of these new materials and processes, for without that no one can hope to say how they can best be used; therein lies the hard work. Nor can any single group of men cover it all, like the old Master Builder did; things are developing too fast at present for that. So the architect, the engineer, the builder and the manufacturer must work together, not in watertight compartments, for unless each has a real understanding of what the other is doing, his contribution to the whole will inevitably be extremely limited.

Let me end by offering a few suggestions, some of them apply to the individual, others might well be undertaken by study groups.

Firstly, every opportunity should be taken to study the new techniques, both in the field and in the factory, so that they and their possibilities are sufficiently understood that buildings are designed to make full use of them. Throughout industry the machine has necessitated this dual development; it is not sufficient to design a tool to make a product, the product must at the same time be modified so that it can be made by the machine. Steel and reinforced concrete did not suddenly appear complete as building materials; they came into use because having already been invented, men took the trouble to find out how they could best be used and designed accordingly.

Secondly, encourage in every way research and development. Co-operate with the manufacturers and builders, perhaps by joint study groups. Do research yourselves, help them to research, do not leave it all to the Government. In regard to new materials, it is difficult to avoid prejudice both on the part of the industry and the public. People are naturally conservative and there are always vested interests to be overcome—the same applies to most innovations—the counter is to strike out boldly and use the many forms of education to back up your efforts.

Thirdly, there is scope for much more joint thought and action between the engineer and the architect. Each needs the other and both are confronted with the same sort of problem—how best to use this rapid development. I would like to see a joint study group started where we can meet and discuss common problems and learn the other's point of view.

Fourthly, the economics of building needs careful and continuous study. No body of people can hope to exert much influence on present-day building who neglect the economic side. In all forms of production the output of a man per hour of work is a matter of great importance; the same must apply to building : economic pressure will be too strong to allow the productivity of its workers to lay too far behind. Output and methods of improving it must therefore be studied by anyone who wishes to speak with authority.

It may well be that many of our present ideas must be radically changed ; for example, it may become economical to build not for permanence but with the express intention of tearing down after a comparatively short life and rebuilding to the then current requirements. It may be that some materials will tend to go out of use for the time being, as I am told stone is doing in Canada because there is not enough work for men to afford to be stonemasons. It may be that the useful brick will be superseded as the common building material because it may not be possible to afford in ordinary buildings the luxury of depending for our walls on the output of a man laying bricks one by one with a tool invented 5,000 years ago—one cannot say. But once more possibilities seem endless. Like our predecessors, man has already built still mightier mountains in some of his cities, but our immediate task is to build well for the common man, and perhaps this time we shall catch up the lag completely.

POINTS FROM THE DISCUSSION

Mr. W. A. Allen, B.Arch. [*A.*] (Building Research Station) : I do not think the technical side of mechanical plant is of anything like such importance at the moment as the philosophical side of it. An understanding of the direction in which we are going with mechanical plant will lead to an understanding of its use, and I think an understanding of the philosophical side of mechanical plant is of special importance to architects, who have to bring it into the æsthetic relationships.

After the last war, in the considerable variety of alternative house types which was attempted, a small number of the designs involved mechanical plant. I do not recall that any great economic success was achieved, such that the houses continued to be built when brick construction again became economical. After this war we shall have a repeat performance, but I think it will be a rather more successful one. Out of the 80, 90 or 100 designs which must have been examined at the Building Research Station, about 1 in 4 or 1 in 5 is dependent to a large extent upon large-scale mechanical plant, that is to say, upon cranes for handling the units, or something of that sort, where the whole design is dependent upon some unique piece of plant. That is a very substantial point with regard to design itself, which comes into close relationship with plant. The architect cannot do anything without considering how big the unit can be, what it will be made of, whether it can stand up to the requirements of sound insulation, heat insulation, and so on.

Sir George Burt : Mechanisation does not mean the destruction of the old crafts, as is so often supposed. The man who can use a powered tool properly is, as the lecturer said, just as skilled a man as the man who uses a hand tool properly, and often even more skilled. As the lecturer said, the question is an economic one. We want to take the drudgery out of the work by means of a machine, leaving the finer work to be done by hand. I do not know whether any of you have ever cut a mortise in a door by hand, but, if you have, there is no need for me to stress the advantage of having a mechanical tool with which to do it. I am quite sure that the modern joiner is no less skilled a man than the joiner of fifty, sixty or a hundred years ago.

The lecturer stressed the point that no real economic progress is made without mechanisation, and I think that is a point that we all have to remember. In the past we have not attached enough importance to it. In this country, as distinct from America, we have always had, in my experience, real assistance from the trade unions in supporting any mechanisation that was genuinely for the benefit of the industry concerned. I can remember that, just after the last war, among other things from America we brought over the suspended scaffolding, which I suppose reduces man-hours per scaffolder by about two-thirds. That was unpopular at a time when unemployment was very bad. Questions were asked as to whether it was safe and it was demonstrated that it was perfectly safe, and there has never, to my knowledge, been the slightest opposition to its use. The lecturer said that the ideal scaffolding has not yet been found, a scaffolding with a platform quickly adjustable to any height, and I think that is true, but I believe the ideal scaffolding is on its way. Except in cases where the suspended type can be used, that is, for over 60 feet, there is room for improvement.

Mr. J. F. D. Scarborough [*F.*], Past-President, Royal Australian Institute of Architects : I have been sent to this country to do a specific job for Melbourne University, and I have discussed particularly the question of the relative merits of the various types of material suitable for mass housing projects, but I have not yet come across one which we have developed extensively and with a great deal of success, namely, vibrated concrete.

The Victoria Housing Commission, which was appointed by the State Government for Slum reclamation work, appointed a panel of four architects in private practice, of whom I am one, and we have built 2,000 houses since June 1940. Those 2,000 houses are made up of approximately 1,200 in brick, 400 in vibrated concrete, and the balance in timber. We embarked upon experiments, which had been

initiated by a small contractor who had been experimenting with some steel forms and some crude methods of vibrating concrete in several small houses in a small outlying agricultural settlement some 30 miles from Melbourne. We went to see the houses that he had built there and we were rather impressed. We saw his plant and we were not impressed. We determined, however, to persuade the Housing Commission to let us make some experiments on the subject. The Commission agreed that we should erect eight experimental houses, all of different plans and different materials. One was of brick and Syncrete concrete, one was an all Syncrete concrete block-house, one was made of vibrated concrete and one of cast concrete, and so on, and a timber house was included. We gave the houses most rigorous tests, including time tests, tests on the loss of heat, dampness, and everything else, and we found that the vibrated concrete house had possibilities. A flat steel table is used, some 30 feet long and 9 feet wide, which is hinged. The internal and external walls are three inches thick, and they are reinforced. The form work for the doors and windows is laid on the table. Each wall of a room is cast as one piece, and in the case of an external wall it may be the width of two rooms. We have cast walls up to 24 feet in length and 9 feet in height, and they are all 3 inches thick. We take them off the steel form by simply tipping the table vertically, and they are picked up by a mobile 10-ton crane and dropped into place in the house, and they are then pointed up. The roof is of normal tile construction on timber framing. The interior is simply finished by spray painting, and the exterior is given a very thin slurry splash coat, which is just sufficient to give it a light texture, and is then coloured by hand or spray, according to the locality and the availability of workmen. The houses are semi-detached single-storey houses. They have stood up extraordinarily well, and we have not had one case of damp penetration. We have had tests carried out over twelve months by the Council for Scientific and Industrial Research on two adjacent houses, with rooms with exactly the same orientation, and we have a maximum difference of only 4 per cent. in heat loss or cold penetration into the house from the exterior.

If any of you are sufficiently interested I am sure you could obtain full particulars by writing to the Housing Commission of Victoria, whose Secretary would be delighted to send you any explanation you may require.

Mr. C. H. Grist (Messrs. Blaw-Knox, Ltd.) : I do not think we have yet realised clearly the full implications of the methods which the war has forced upon us, nor do I think that we have yet a clear view of the social and economic implications of changes in methods.

I speak as a mechanical engineer interested in the manufacture of concrete machinery and building equipment. There is one great problem which has confronted us in the manufacturing industry, namely, the full utilisation of man-power. We had two shops which were operating with reasonable efficiency. We introduced an incentive scheme into those shops, with the result that we got 100 per cent. improvement in efficiency. The building industry needs to secure, from new technical processes and facilities in the form of machines, a higher standard of production efficiency. I believe that the problem in the building industry will be the same as that in the engineering industry, where we have the machines and we have to get the full capacity out of those machines, and the only way in which it can be done is to have planning carried out at a responsible level in the organisation, in order to secure the proper utilisation of the machines.

With regard to planning, I know that Sir George Burt will not mind my referring to one classic job of his to illustrate my point, namely, the Southampton graving dock. When that work was carried out many conferences were held and a rather elaborate central mixing plant was evolved. Careful consideration was given to the receipt of aggregates and cement in bulk, to the time of output and to the carrying away of the concrete after it was finally mixed, which was often a bottleneck in the operations. As a result of that planning, the work on the Southampton Graving Dock job—one of Sir George Burt's—a phenomenal output of 1,000 cubic yards a day was secured over the period of the duration of the contract. I think we have to approach our building problems with this new plant based on a planned output, so that the full economic value can be obtained from the machines, and to secure the maximum efficiency from the workmen using them, rather than acting as we have in the past and putting a machine into the hands of a workman and expecting him to do the best he can with it. With a given set of expensive machines it becomes necessary to plan a certain output, a certain rate of progress, and to give a reward to the individual workers in accordance with the progress that is made up to or beyond that schedule.

We are entering upon a time when we hope to realise full employment, and I think it is extremely important that we should substitute for the former economic insecurity an incentive to get the maximum effort.

Mr. George Dickson (Messrs. Winget, Ltd.) : The manufacturers produce vibrating equipment and other machinery for dealing with concrete, and so on, but when we sell such machinery for houses we sell it to the builders and not to the architects. When we sell plant for civil engineering projects we sell it to the civil engineer, who is generally close to the design and introduces his plant at an early stage, but the builder has already got what he is going to do determined before he comes to us to buy the plant. In the forty years' experience of my firm I cannot find records of more than ten architects having been in contact with the firm, but there must have been very many times that number of civil engineers in close and constant contact with the firm to see what it could produce and urging it on to produce more and more efficient equipment for their jobs.

I therefore support the suggestion that there should be some machinery by which we could get closer together. We realise that we are not going to sell plant to architects, but the architect should see at an early stage what is possible in the way of modern tools for building.

Mr. Cruickshank : I am very interested in the extension of the use of mechanical plant, but I feel it is time somebody said something which may be a little critical of it. We have been told by the lecturer and Sir George Burt, quite rightly, that it is important to secure economy in man-hours, but there has been a danger in the last five years of thinking that saving in hours is the same thing and that speed is necessarily economical. There is one aspect of the subject which has not been really mastered yet in this country, and that is the question of plant maintenance and repair. A dumper may be put on to do a specific job and it does that job and everybody thinks it wonderful, but it then goes into the depot for three weeks or three months, and, so far as the community is concerned, I think it may well be (there is not the information available at the moment) that a certain item of plant may not be economical at all so far as man-hours are concerned.

Mr. Clutterbuck : Plant engineers or the persons responsible for the plant must get out some scheme of maintenance. Maintenance is divided into two sections, one being regular inspection. It is no use putting a tool to work on a big job with, say, fifty men and other equipment, if that piece of machinery may break down on account of some little defect which could have been prevented by rigid inspection. I think the only solution of the problem is for plant engineers to get together and draw up some scheme of inspection, and I think that is all the more important because this equipment is scattered all over the country.

One other point in connection with planning is that the plant engineers should have more to say about the equipment. They should tell the plant manufacturers what they want and what are the defects of the plant supplied. On the passenger side and the goods side that is what happens. One or two types of vehicles have been standardised ; fewer spares are carried and there are fewer breakdowns, and there is an efficient system of inspection. In that particular case a great many of the difficulties have been overcome by standardisation.

Mr. Edwin Williams [*F.*]: Like all the previous speakers, I feel indebted to the lecturer for his most impressive address, but I doubt whether a few extracts from history, some of them misapplied, entitle him to be called a historian, and I doubt whether a very pleasantly worded argument in favour of the saving of man-hours entitles him to be styled a philosopher. For instance, I do not think the Egyptians stopped building pyramids because after a study group had been into the question of man-hours they discovered that it was not economical. They probably stopped because they had run out of slave labour. The lecturer's assertion that the Romans made no startling innovations reminds me of the story of the architect who went to Rome in the fourth century and, after he had seen the work on the Basilica of Constantine, went back to his local architectural society and said : "You have no idea what is going on in Rome. They are no longer putting up real buildings with real columns ; they are putting up concrete and covering it up with marble to look like architecture." If that was not a startling innovation, I should like to know what the modernists of to-day have to show in the way of startling innovations.

With regard to the idea of mechanising everything by producing civil engineering plant, which was advocated by one speaker in the discussion, who wanted to interest architects in the same sort of plant as that in which engineers are interested, we have not quays, dams, wharves and roads to build : the scale of our building operations is much more limited than that ; our work is much more fine and precise and the sites are much more limited. The true test of whether mechanisation is really successful will be, I think, in the opinion of most architects, whether the job itself comes out cheaper, and the saving of man-hours in the manner suggested does not necessarily mean that the job will come out cheaper. On the other hand, I think that all this emphasis on getting one's work done for one by gadgets will lead to a great deal of experimentation by comparative amateurs in building work, at the owners' expense.

PRACTICE NOTES

EDITED BY CHARLES WOODWARD [A.]

Reprints of Practice Notes

These notes are being reprinted on one side of the paper only so that members can classify and file them to suit their own convenience.

The subscription for all notes in the current series from June last to the conclusion of the present volume in October will be 5s. The rate for the Notes in Volume 53 will be fixed when it is known how many members wish to subscribe.

A limited number of June notes is available, late comers will possibly be able to obtain reprints of the present series at the 5s. rate only from the issue current at the time they write.

Orders should be addressed to the Secretary.

HOUSING

Housing (Temporary Accommodation) Act, 1945

This Act applies to England, Wales and Scotland and came into force on 15 June 1945. It enables local authorities, when authorised by an order of the Minister of Health, to use land vested in them or at their disposal and which is or forms part of an open space, for the purpose of providing temporary housing accommodation.

The powers under the Act must be exercised during the period of two years from the passing of the Act.

The Minister of Health may not give the authorisation unless the Minister of Town and Country Planning certifies that such use of the land is expedient in the public interest having regard to the housing emergency in the particular circumstances of the case. The authorisation is limited to a period of ten years and is revocable by an order of the Minister during that period.

Enactments relating to open spaces and easements and rights in connection with other land are suspended if that is necessary for the purpose of providing the temporary housing accommodation.

Injurious affection of other land by the exercise of the powers under this Act may be the subject of compensation payable by the local authority.

When an authorisation ceases to be in force the local authority must reinstate the land as an open space to the approval of the Minister.

" Open space " means any land laid out as a public garden or used for the purpose of public recreation but does not include a disused burial ground.

Expenditure on Private House Repair

Asked what limitations are now imposed on the amount of expenditure to be incurred in private house repairs and alterations, and if any changes are contemplated, the Parliamentary Secretary to the Ministry of Works circulated the following statement. (5 June 1945.)

Under the present Defence Regulation 56A, up to £100 may be spent without licence on building work on any property in any period of twelve months except in London and in certain areas of the Home Counties where the limit is £10.

In the course of the debate on 22 March 1945 my right hon. Friend the Minister of Health announced that it was proposed to extend the limit of £10 to the whole of Great Britain. Following upon this announcement, consultations have taken place with the national representatives of the building industry and of the professional bodies concerned and with the local authorities, while a review has also been made of the practical experience of the operation of the £10 limit gained during the last few months in London and the Home Counties. As a result it has been decided to make a number of important modifications before applying the £10 limit to the rest of the country.

These changes are primarily designed to ease the task of the local authority staffs who will have to assist in administering the scheme and to relax some of the more irksome restrictions upon the freedom of action of both householders and builders.

The main features of the modified licensing system will be as follows :

(1) The new scheme will come into force throughout Great Britain, including London and the Home Counties, as from 1 August and will cover the period from that date to 31 January 1946.

(2) During this six months' period, building work costing up to £10 may be undertaken without a licence (i.e., at the rate of £20 per annum).

(3) In addition, £2 worth of work may be undertaken in each calendar month from August to January. (This monthly allowance, which is not cumulative, has been introduced primarily to avoid applications for licences for trifling repairs.)

(4) Work of an emergency character (e.g., the repair of burst pipes) may, of course, be undertaken without waiting for a licence.

(5) In reckoning the amount of work which may be undertaken without a licence (i.e., up to £10 during the period plus the additional £2 allowance in any one calendar month) no account will be taken of :

(a) Work which has been licensed or authorised by a Government Department.

(b) Work undertaken by a local authority (e.g., bomb damage repair), or licensed by a local authority.

(c) Work carried out prior to August 1 1945.

(6) Where work is carried out by an owner or occupier on premises occupied or to be occupied wholly or partly as a private dwelling, with his own personal labour, or with unpaid labour, the value of these services and the cost of any materials used by this labour will be disregarded.

(7) The £10 and £2 allowances will be applied to all separate dwellings individually. (Hitherto the great majority of blocks of flats and tenements were reckoned as one unit.)

(8) Owners of property for which the £10 and £2 allowances would be totally inadequate, may obtain maintenance licences from local authorities to cover specified categories of maintenance and repairs where the cost does not exceed £100 over a period of twelve months. Above that amount Regional Licensing Officers will continue to issue annual maintenance licences.

(9) In cases where a local authority issues a Statutory Notice on grounds of public health, danger, etc., a licence will automatically be granted.

(10) The Minister of Works will delegate to local authorities the power to issue licences on his behalf in respect of work costing up to £100.

(11) Licences for amounts above £100 will be granted by the Ministry of Works Regional Licensing Officers. Where an owner or occupier wishes to build, repair, adapt or convert a dwelling-house, at a cost exceeding £100, the local authority will, as hitherto, consider whether the work in question is essential and, if so, will grant a " Certificate of Essentiality." On receipt of such a certificate, the Regional Licensing Officer of the Ministry of Works will normally grant a licence.

(12) The powers thus given to local authorities of issuing licences for all works costing up to £100 and of issuing Certificates of Essentiality for housing work above that sum, will enable the local authorities to decide for themselves, in the light of local needs, the respective priorities to be accorded to various types of building work, and to ensure that their housing programmes are not prejudiced by the carrying out of less essential building projects.

These new arrangements will be subject to periodical review.

Permanent Housing Programme

The Ministry of Health have issued a circular 104/45 dated 1 June 1945 for the information of Local Authorities. The circular is accompanied by a Memorandum 289 Housing, which sets out the particulars required by the Ministry when tenders (or direct labour estimates) are submitted by a Local Authority for approval in connection with their permanent housing programmes.

WAR DAMAGE REPAIRS

Percentage Addition in Cost plus Cases

The War Damage Commission, after consultation with the National Federation of Building Trades Employers, has agreed to extend to £100,000 the charges for war damage repair to which the sliding scale of percentage additions in cost plus cases set out on paragraph 35A (fee on builder's direct work) of ROD. 1 shall apply. The additions are as follows —

Prime Cost	*Percentage Addition*	*Minimum Fee*
£	%	£ s. d.
25,001—50,000	12	—
50,001—75,000	11½	6,000 0 0
75,001—100,000	11	8,625 0 0

In all cases where the prime cost is likely to exceed £100,000 the Commission's Regional Office should be consulted.

Voluntary Hospitals and Value Payments

Asked if voluntary hospitals that have been destroyed by enemy action will be able to claim, when rebuilt, the same increase over value payments based upon 1939 valuations as an owner-occupier, the Chancellor of the Exchequer replied that voluntary hospitals, which are charities, fall under section 69 of the War Damage Act 1943. That section provides that if (apart from its provisions) a value payment would be appropriate, that payment shall not be made, but the War Damage Commission may, if they think fit, make in lieu thereof, a payment of such amount as they may in their discretion determine after consultation with such persons or bodies as appear to them to be appropriate. As stated in their published "Practice Notes," however, the War Damage Commission propose as a general rule to exercise their discretion by giving the properties within section 69 the same treatment as corresponding properties falling within the general provisions of the Act unless some authoritative body representing any class of charity shows good reason for special treatment of properties of that class. (29 May 1945.)

Air Raid Shelters (Factories)

Asked if factory owners are now permitted to dismantle air raid shelters the Secretary of State for the Home Department replied that air raid shelters in factories which seriously impede production or industrial efficiency may be removed if so desired as and when labour can be made available for the purpose and subject to the grant of any necessary building licence. (17 May 1945.)

Clearance of Useless Remains

The Treasury have issued a Direction to the War Damage Commission under section 20 of the War Damage Act 1943 with reference to the clearance of useless remains in total loss cases. The Direction is without prejudice to the powers of the Commission under section 13 of the Act, and deals with those value payment cases where debris or the remains of buildings and structures are left on, or comprised in, the site of a destroyed heriditament.

In such cases the Commission may make a cost of works payment in respect of works executed in the following circumstances, unless, in the opinion of the Commission, this would in any particular case involve injustice to any person interested in the kind of payment to be made. The cost of works to be allowed are works of clearance from the site of a hereditament (being a developed hereditament which has sustained war damage involving total loss where the Commission are satisfied that reinstatement or re-development of the hereditament would be both probable and reasonable) of debris and remains of buildings and structures remaining or comprised in the hereditament being debris or remains which in the opinion of the Commission could not reasonably be incorporated in works of reinstatement or re-development.

The Direction is aimed at removing a possible inequality of treatment between an owner whose site has been cleared free of cost by the local authority, and the owner who has been left to carry out his own clearance work.

Where an owner has sold his property at a reduced price because the site was encumbered by debris or valueless structures, the new owner will not be allowed to claim the cost of removal from the Commission, and the original owner will be made an allowance in the calculation of the value payment, on the basis of clearance costs as at 31 March 1939, for the reduction in the site value caused by the ruins.

The Commission should be consulted in any case of doubt before works of demolition and clearance are undertaken.

TOWN AND COUNTRY PLANNING—REGULATION, AMENITY

Distribution of Industry Act, 1945

This Act came into force on 15 June 1945 and applies to England, Wales and Scotland.

Under the Act the Board of Trade may acquire land in "Development Areas," either by agreement or compulsory purchase, for the provision of premises for industrial undertakings or means of access thereto. "Development Areas" include Durham, parts of Northumberland, parts of West Cumberland, parts of South Wales, parts of Monmouthshire and parts of Scotland as detailed in the First Schedule to the Act.

The Board may erect buildings on the acquired land and carry out works for the purpose of providing premises, sites or means of access, or make the land suitable for other persons to carry out such work. The Board of Trade may with the consent of the Treasury make loans to trading or industrial estate companies for the provision or expansion of industrial undertakings in the areas.

Any Minister may with the consent of the Treasury make grants or loans to provide transport (road, rail, water or air), power, lighting, heating, housing, health and other services in order to develop an area and the industrial undertakings.

The Treasury may, in accordance with recommendations of an advisory committee to be appointed by them, make annual grants or may make loans to persons carrying on industrial undertakings or proposing to do so. The Board of Trade must be satisfied that the industrial undertaking complies with the requirements of the proper distribution of industry.

The Board of Trade may acquire derelict land in a "Development Area" either by agreement or compulsory purchase to bring it into use or improve the amenities of the neighbourhood, and may carry out any work on the land for these purposes. They may, with the consent of the Treasury, make grants to any local authority or to any company which does not distribute its profits to its members, so that these bodies may do work on the land or improve the amenities of the neighbourhood.

The Board of Trade may from time to time consider whether any area should be added to or removed from the First Schedule to the Act. They must do this at the end of three years from the passing of the Act. The addition of an area depends on the special danger of unemployment in the area owing to the distribution of industry. The addition to or removal from the Schedule is made by an order of the Board of Trade after consultation with every local authority whose area includes the land to which the order relates. The order is not effective until it has been approved by each House of Parliament.

The Special Areas (Development and Improvement) Acts 1934 to 1937 are repealed by this Act.

Sixty days' notice must be given to the Board of Trade before entering into a contract for the erection of an industrial building forming part of a new industrial unit or beginning the erection of such a building, but this does not apply to a building which will not have an aggregate floor space of more than ten thousand square feet. A building forms part of a new industrial unit unless it is contiguous or adjacent to another industrial building used in the same undertaking either erected before the passing of the Act or of which the sixty days' notice has been given, or that it replaces another industrial building and is erected either on the same site or on a contiguous or adjacent site. Under a sixty-day notice the Board may require to know the situation of the proposed building, the proposed industrial process, the estimated aggregate floor space and the estimated number of men and women to be employed. Failure to give the sixty days' notice or to give the required information is an offence liable to a fine on conviction not exceeding one hundred pounds. The giver of false information is liable on conviction to a fine not exceeding one hundred pounds or on conviction on indictment to a fine not exceeding five hundred pounds or to imprisonment not exceeding twelve months or both fine and imprisonment.

The Board of Trade may make regulations exempting any class or description of industrial building from the requirement as to the sixty days' notice. The regulations must be approved by both Houses of Parliament.

For the purposes of the sixty-day notice the person who causes the erection of the building and not the person who carries out the work, is deemed to be the person by whom the building is erected.

The terms upon which acquired land is disposed of by sale, lease or otherwise or land upon which the Board of Trade have erected buildings or carried out works is determined with the consent of the Treasury.

The Board of Trade may not erect any building or carry out any work so as to contravene the provisions of a scheme in force under the Town and Country Planning Act 1932, the Town and Country Planning (Scotland) Act 1932, or any enactment repealed by either of those Acts or by any enactment thereby repealed.

Where a compulsory purchase order includes a common, open space, fuel allotment or field garden allotment the order must be confirmed by Parliament unless the order provides for an exchange of land of equal area and certified by the appropriate Minister to be equally advantageous to persons entitled to commonable or other rights and to the public. In the case of a common, fuel allotment or field garden allotment the appropriate Minister is the Minister of Agriculture and Fisheries, and in the case of an open space the Minister of Town and Country Planning. Before giving his certificate the Minister must give public notice of the exchange, give opportunity for interested persons to make representations and objections and if necessary hold a public local inquiry.

A compulsory purchase order must not authorise the purchase of land the site of an ancient monument or object of archæological interest or of any building included in a list compiled or approved under section 42 of the Town and Country Planning Act 1944. An order must not authorise the purchase of land the property of a local

authority or land the property of statutory undertakers held by them for the purpose of their undertaking, or land belonging to the National Trust.

"Common" includes any land subject to be enclosed under the Inclosure Acts 1845 to 1882 and any town or village green.

"Fuel allotment" and "Field garden allotment" mean an allotment set out as such under an Inclosure Act.

"Open space" means any land laid out as a public garden or used for the purposes of public recreation, or land being a disused burial ground.

Procedure for compulsory purchase orders and modifications of the Lands Clauses Acts are contained in the Second Schedule to the Act.

Note.—In moving the Second Reading of the Bill in the House of Lords on 6 June last Lord Woolton said in regard to the sixty-day notice: "The purpose of this requirement is that industrialists shall tell the Board of Trade before their plans reach an advanced stage, so that on the one hand the Board may place at the disposal of industrialists information which may be useful to them in deciding the location of a new factory, and on the other hand the industrialists may be persuaded to put a factory elsewhere if it is in the national interest that they should do so. It quite clearly cannot do the industrialist any harm to get all the advantage that comes from knowledge of what the Board of Trade can tell him, if he does not already know. It may indeed be that when the industrialist contemplating extension realises that it would be to the national advantage if he extended in one place rather than another and when he finds that it would be no serious impediment to his commercial enterprise that he should do so, he will quite willingly make that change. The Board, having no comment to make, have power in cases of particular urgency to permit construction to proceed before the sixty days have passed. To avoid any misunderstanding, it should be made clear that the provisions in this clause do not impose any delay on industrialists. It is inconceivable that plans for the erection of a building of 10,000 square feet will not be considered sixty days before it is necessary for building operations to begin."

Development by Authorities

The Minister of Town and Country Planning has made Regulations under section 32 of the Town and Country Planning Act 1944 setting out development by Authorities to which his consent is not required, and development to which his consent is not required unless he requires that application must be made for his consent. The Regulation came into force on 18 May 1945. (S.R. & O. 1945, No. 532.)

Town and Country Planning. England and Wales

Interim Development: Applications

The Minister of Town and Country Planning has issued a Direction under section 6 (1) of the Town and Country (Interim Development) Act 1943 requiring that applications to the Interim Development Authority for development which are specified in the Direction, shall be referred to him for decision under section 10 of the Town and Country Planning Act 1932. The Direction refers to applications made after 1 May 1945. (S.R. & O. 1945, No. 419.)

London Squares and Railings

Asked whether any steps have been taken to prevent the re-enclosure of London squares and their suitable layout for enjoyment by the general public, the Minister of Town and Country Planning replied that the future of the London squares is under consideration and he hoped, at an early date, to arrange for a conference between his officers and officers of the London County Council to discuss the matter. (7 June 1945.)

Asked whether any policy had been reached with regard to the future of railings around the Royal Parks, the Minister of Works replied that the disappearance of the park railings had, he thought, been generally welcomed. He did not, therefore, at present propose to replace any railings around or inside the Royal Parks except where this is absolutely necessary to protect flower beds or other amenities. (30 May 1945.)

BUILDING REGULATION

LONDON BUILDING ACT, 1930, SECTION 13

Building Within the Prescribed Distance

In the R.I.B.A. JOURNAL of May 1943 counsel's opinion on this matter was published. Subsequently the District Surveyors' Association sought the opinion of eminent counsel, which was in direct contradiction to the opinion obtained by the R.I.B.A.

The attention of members is called to this difference of opinion which indicates clearly that the point is open to doubt and can only be finally decided by the Courts.

It is suggested, therefore, that members who are concerned with the re-erection of buildings within the "prescribed distance" as defined in section 5 of the Act, should advise their clients as to the position, if such buildings are not buildings which existed on 1 January 1895, but buildings which have been rebuilt since that date.

Civil Building Licensing

In a Circular 76/45 dated 25 April 1945, addressed by the Ministry of Health to the Clerks of Local Authorities in London and the Home Counties, it is suggested that sympathetic consideration should be given to applications for licences for works where the labour is mainly specialist, i.e., heating, ventilation, domestic engineering, electrical contracting, etc., and the amount of building labour required is not significant.

THE REDUCTION OF SITE MAN-HOURS IN CONVENTIONAL HOUSE CONSTRUCTION

These notes, based on the experience of a private enterprise builder, came into the possession of the R.I.B.A. Housing Committee, who, after considering them and without desiring to express any opinion upon them as a whole, felt that it would be extremely valuable to have them published in the JOURNAL as an indication, supported by authentic pre-war figures, of the way in which traditional building can be considered from the point of view of the reduction of man-hours. At the present juncture, members may find these of great interest, in view of the consideration which is now being given to reduction of man-hours and reduction of site-labour in regard to post-war housing problems and the attention which the Ministry of Works is giving to this in respect of permanent prefabricated houses.

The following rough notes are put forward as suggestions at a time when the reduction of site man-hours is a matter of the utmost importance. Whilst present conditions prevail it is necessary in some cases, unfortunately, to reduce the standards of planning and workmanship in order to reduce *site labour*. These notes are not, therefore, intended as a guide to good building practice, although some of them might profitably apply to peace-time work under normal conditions:—

Plans

DON'T have more breaks than you can help in planning walls, particularly external walls. Remember that simplicity in shape is worth a few extra square feet of floor area. Simplicity saves time in setting-out, plumbing corners and cutting closers.

Do keep storey heights to the minimum.

Do remember that a square plan has the least run of external walling for a given floor area. If houses are semi-detached, it saves time and money (as well as land) to increase the depth of the house at the expense of width in order to increase the amount of wall common to both houses.

Bricklayer

DON'T use brick arches—lintels are quicker to build in.

DON'T employ ornamental brickwork, band courses, etc.

Do in cavity work, use slates to bridge cavities at reveals. This is quicker than returning the brickwork.

DON'T use projecting courses of tiles, etc., at heads and cills of windows. A projecting wood or metal cill saves time.

Do use the simplest bond for cavity work—one snapped header to three stretchers is enough to avoid the monotony of stretcher bond.

Do arrange heights of storeys, opening, etc., to avoid the necessity of cutting bricks.

Do plan your fireplaces and chimneys in the most economical way from the point of view of gathering over. Metal flues and casings offer economies in site labour.

Don't have fancy chimney heads in brickwork. Plain pots and perhaps a couple of courses of roofing tiles to throw off the water are preferable to stone or artificial stone caps.
Do use breeze or clay blocks for internal walls in preference to brickwork.
Don't have brick surrounds to the fireplaces involving site craftsmanship. Let the surrounds be of a type that can be brought to the job ready made.
Don't bother about mat sinkings—a raised threshold is easier and just as effective.
Do use factory-made precast concrete lintels.
Don't use tile or other pavings requiring skill—case-hardened, coloured cement paving will do if solid floors are required in kitchens, etc.
Do reduce wall tiling to a minimum.

Tiler

Do keep roof shapes simple; a plain gabled roof is easiest because it avoids cutting of tiles.
Do use a tile that is easiest and quickest to lay. Interlocking pantiles are best from this point of view. They also save battens.

Carpenter

Do design your joinery so that it can be fitted in the house without trouble. Don't be afraid to use loose cover moulds to avoid scribing.
Do plan your staircase so that it can be delivered and fixed in one piece. Avoid half-landings, etc., that have to be made on the job.
Do have your scantlings cut to length off the job and suitably bundled. This saves time and avoids waste.
Do standardise on joist sizes and avoid notching over plates.
Do prefabricate the roof timbers. Light timber trusses are cheaper and quicker than the traditional type of roof, as well as being more economical in timber. The trusses can carry prefabricated panels incorporating purlins, rafters and battens, to which the same remarks apply. A framed gable, tile hung, is preferable to a brick gable.
Don't make elaborate joints in trimmers. Standard metal shoes are quicker to fix.
Don't bother about mitred borders to floors around hearths, etc.—an unnecessary refinement.
Don't use sprockets at rafters' feet. Let the fascia do the job.
Do employ an eaves soffit. It saves fiddling with the brickwork under the tiles.
Don't use picture or dado rails.
Do prefabricate the joinery wherever possible, e.g., door assemblies complete with frames, architraves (if any) and furniture.
Don't provide cases or ducts for water pipes—an unnecessary luxury, particularly if the plumbing is orderly.

Plasterer

Do eliminate plastering as much as possible by the use of wall boards.

Engineer and Plumber

Do plan the sanitary fittings and heating system to reduce pipe runs and drains to a minimum.
Do consider the possibilities of surface wiring and switches, to save cutting chases and making good.

Decorator

Do keep to plain colours in paintwork—avoid "cutting in."

Drains

Do make the fullest use of precast concrete manholes, etc.

PARTICULARS CONCERNING A PRIVATE ENTERPRISE HOUSING SCHEME

Dates between which the Housing Scheme was carried out: 1938-1939.

Number of houses comprised in Scheme: 232.

Labour in terms of Man-Hours in the building of *One House* of 786 ft. sup. between main walls. plus. 24 ft. sup. adding bay windows.

	BL.	B.	C.	S.	SL.	P.	PL.	PLU.	PLUL.	G.	E.	PA.	LAB.
1. Excavation													35
2. Excavation on Water Service													6
3. Concreting													45
4. Brickwork	131	178											
5. Finishing off	13	28											50
6. Paths													15
7. Carpentry (Fixing)			132										52
8. Carpentry (Fencing)			21										21
9. Painting												96	27
10. Plumbing								46	46				
11. Glazing										14			
12. Gas Fitting								10	10				
13. Plastering						122	84						
14. Tiling				20	24								
15. Drains													51
16. Electric Light											22		22
TOTALS	144	206	153	20	24	122	84	56	56	14	22	96	324

(On basis of 51 weeks at 50 hours = 2,550 hours per man per annum).

KEY

BL.	*Bricklayer's Labourer*	One man builds	17.7	houses	per	annum.
B.	*Bricklayer*	,, ,, ,,	12.4	,,	,,	,,
C.	*Carpenter*	,, ,, ,,	16.7	,,	,,	,,
S.	*Slater*	,, ,, ,,	127.5	,,	,,	,,
SL.	*Slater's Labourer*	,, ,, ,,	106.3	,,	,,	,,
P.	*Plasterer*	,, ,, ,,	20.9	,,	,,	,,
PL.	*Plasterer's Labourer*	,, ,, ,,	30.4	,,	,,	,,
PLU.	*Plumber*	,, ,, ,,	45.5	,,	,,	,,
PLUL.	*Plumber's Labourer*	,, ,, ,,	45.5	,,	,,	,,
G.	*Glazier*	,, ,, ,,	182.1	,,	,,	,,
E.	*Electrician*	,, ,, ,,	115.9	,,	,,	,,
PA.	*Painter*	,, ,, ,,	26.6	,,	,,	,,
LAB.	*Labourers*	,, ,, ,,	7.9	,,	,,	,,

Note.—The labour constant of Bricklaying hours (i.e. hours of bricklayer on brickwork) should include all labours, bedding and pointing door and window frames, wall plates, lintels, setting and flaunching chimney pots, parging flues, building in air bricks, etc., and for stopping putlog holes when taking down scaffolding.

Book Reviews

RECENT FRENCH HISTORICAL WORK

L'Architecture Française, by Pierre Lavedan. 256 pp. + 96 pls. (1944).

Les Styles du Monde Romaine Antique, by Victor Chapot. 144 pp. + 48 pls. (1943).

Le Style Byzantin, by Paul Lemerle. 130 pp. + 48 pls. (1943.)

Les Style Grec, by Pierre Devambez. 122 pp. + 48 pls. (1944.)

Le Style Roman, by Louis Bréchier. 126 pp. + 48 pls. (1941.)

Le Style Louis XV, by Paul Verlet. 154 pp. + 48 pls. (1942.)

La Gravure Française, by Emile Dacier. 184 pp. + 48 pls. (1944.)
All in the series *Arts, styles et techniques*. Edited by Norbert Duforcq. Librairie Larousse. sm. 8vo. Paris. 1941-44.

REVIEWED BY NIKOLAUS PEVSNER

We shall have to revise our ideas of intellectual starvation on the Continent between 1939 and 1944. Lists of publications are beginning to come in from France, Italy and other countries and they show plenty of titles. We may not know yet enough about the quality of what was written and brought out. But the quality of book illustration shown at a recent C.E.M.A. Exhibition proved that by no means only Nazi mentality made its voice heard. Now the same appears from this series of comparatively inexpensive handbooks of Larousse's. Many scholars have, it seems, preferred the seclusion of their studies and the comfort of their research to a conspicuous place in the political arena, on this side or the other. That may in troubled times be a questionable attitude. However, the results—as books or pictures or symphonies—should all the same be judged on their own merits.

Larousse's series really falls into two parts. Neither has so far reached this country complete. The one consists of volumes on the various arts in France : painting (not received), sculpture (apparently not yet published), architecture and engraving, the other of volumes on the various periods or styles in art and architecture, Greek, Roman, Byzantine, Romanesque, and then Gothic, French Renaissance, Henry IV to Louis XIII, Louis XIV, Louis XV, Louis XVI, Empire, and later nineteenth century. Of these I have only seen the first four and the one on the style of Louis XV.

What can in a short review be said about the 1,100 pages of the volumes examined ? As a fair average one can take it that a book of about 50,000 words requires, to do it justice, a review of at least 500 words. To write in these columns an article of 4,000 words on this series of popular pocket books is obviously out of the question. I suggest, therefore, to do two things. Of the series on the arts I shall leave out entirely the volume on French engraving, because it does not concern readers of this JOURNAL, and because it is, though informative, a conventional and old-fashioned book, but I shall deal with the volume on French architecture by Pierre Lavedan separately below, because it is an all-round important work. Of the series on styles I shall only consider very briefly the chapters on architecture, chapters of varying length (about 15 to 35 pages in each volume) and varying quality.

The rule followed by all authors is to start with a general introduction on the history of the period and its stylistic character. After that comes architecture. Materials are taken first, rules or principles of taste second. Historical development is less important. This is specially noticeable in the volume on Roman art, where more than six hundred years are taken as though they represented one uniform style. The same applies to the Greek volume, in which one would expect separate chapters on archaic, classic and hellenistic buildings. To discuss Temples as a whole regardless of whether they date from the sixth or the second century cannot be very helpful.

From the Middle Ages onwards the books specialise in French art, although in the case of the Romanesque style a few pages are tacked on in which foreign countries are treated very cursorily. Considering the vital ties between Anglo-Norman and Normandy-Norman thirty lines does not seem quite enough to give an adequate picture to French readers of eleventh and twelfth century building in England. There is in this French account of the Romanesque style abroad yet another remarkable element. The German share is successfully made to appear negligible. This is achieved by splitting up the German territory into Ancienne Austrasie (Lotharingia) and a general Central Europe of which a few lines deal with Suabia, Franconia, Lower Saxony, etc. This may be a shrewd political move, but from the historian's point of view it seriously upsets the balance of architectural development, since for the eleventh century at least the Rhineland and Saxony belonged most closely together, and made a contribution of the most powerful. Confusion is incidentally carried still further by wrong dating. Maybe one is just now too watchful over scholarly objectivity. Somehow it seems a much healthier expression of national feeling to dedicate one volume (Professor Verlet's) to "tous mes camarades encore détenus en Poméranie" than to bend facts into conforming with the demands of patriotism.

On the whole the views presented in all these volumes are remarkably up-to-date. Recent research has been made use of nearly everywhere. The most serious omissions which I noticed are Dr. Joan Evans's Cluny volume, which, though published in 1938, is not quoted in *Le Style Roman* (nor in *L'Architecture française*, see below) and Mr. Fiske Kimball's work on the Rococo.

The series reviewed above is frankly popular—a brief summing-up of accepted views. Professor Lavedan's book is very readable too, but it is in its grouping of the material and its emphasis a more original contribution, and if I am not mistaken—the best short history of French architecture up-to-date. Professor Lavedan being the foremost French authority on the history of town planning, does not take architecture narrowly. There are special chapters on *urbanisme* and garden art. There is also much more on the development of public buildings than is usual. Moreover, modern examples are everywhere given a fair share. Not a page is dead antiquarianism. Plenty of the facts and view-points will be new to most British readers. To give just one example, church and monastic architecture of the seventeenth and eighteenth centuries in the French provinces is treated much more fully than in any other textbook easily available over here.

There are ninety-six plates in photogravure, rather of the type we know in Pelican books. The price is, of course, higher than that of Pelicans : 80 francs, that is about 8 or 10s.

The historical treatment of first church and then civil architecture is preceded by a chapter on materials, and one on construction. After that several pages follow devoted entirely to such abstract problems as mathematics and beauty, symmetry and harmony—an interesting survival of classic French schemes for architectural treatises. An English author of to-day would not venture into any such generalisations, a German author would have replaced them by equally general and abstract ones on *Zeitgeist* and similar historico-philosophical problems.

Professor Lavedan has worked into his text French research right up to war-time publications. He is less informed, it seems, on foreign research. The absence of any reference to Dr. Evans's Cluny book has already been mentioned. More striking is the disregard of important German publications, even of twenty and more years ago. Again, one's first reaction to this is to attribute it to misguided patriotism. With Professor Lavedan, however, that may not be the case. He is only following the lead of Puig y Cadafalch, whose *Premier Art Roman*, in spite of its patent lack of balance and Mediterranean bias, has been widely accepted by French scholars. Thus, *e.g.*, Puig y Cadafalch ignored and so does Professor Lavedan Effmann's *Centula*. Now that is not only a matter of bibliographical completeness, but one of an entire change of outlook on the Carolingian achievement in France. Dr. Schürenberg's book on French churches between 1250 and 1350 does also not appear in Professor Lavedan's bibliography, although it is the most detailed account of that obscure century. No less surprising is the omission of Dr. Giedion's early book in German (*Bauen in Frankreich*) with its pioneer chapters on French iron and steel building of the nineteenth century. The same author's *Space, Time and Architecture* could, of course, not be in Professor Lavedan's hands, as it came out only after the collapse of France. Hence also his silence on Anthony Blunt's *Mansart*, and the new American monographs on Carolingian St. Denis and the cathedral of Noyon.

From Art to Theatre. Form and Convention in the Renaissance. By George R. Kernodle. 8vo. 255 pp. 62 illustrations. University of Chicago Press. 1944.

REVIEWED BY RICHARD SOUTHERN

If the art forms of a given period have common characteristics, how far can we, when we lack direct information on the details of its system of stage-setting, base a reconstruction on inference from the other arts of that period ?

In this book Mr. Kernodle applies the method to at least eight Renaissance stages : the Dutch Rederyker, the Spanish popular, the German curtain, the Terence-Academy, the Jesuit, the Teatro

Olympico, the Elizabethan, and—a little better known—the Italian perspective stage.

He first sets out to establish the roots of "scenic background" in the arts of the late Middle Ages; such, for instance, as the Castle Façade, flanked by towers containing exterior doors, and opening in the centre to show an interior scene, the Garden, shown by a tree, a bush or a fountain, and an enclosing wall, the Mountain, the Ship, the Triumphal Arch, the canopied Throne against a screen, etc. He then classifies the treatment of these into three main conventions of composition: (*a*) that where the figures are *backed* by a central, generally architectural, façade (represented with certain very strict conventions); to this he relates the Elizabethan and Dutch stages; (*b*) that where the figures are *framed* by a pair of side accents—towers, or houses, or a double row of houses—leaving a central open vista; relating to the Italian perspective side wings; and (*c*) that where the figures are either backed *or* framed by a long arcade-screen before or behind the arches of which many various separate scenes may be shown; this he exemplifies in the "Terence" stages, the Jesuit, and that of the Teatro Olympico.

On the whole he justifies these associations with considerable effect. Stages we had considered plain and bare suddenly take a Renaissance richness, and some that seemed inarticulate take a life and movement. One of his most vivid links (and one very rarely pointed out before) is that of the *tableaux vivants*, relating the street shows put up by town authorities for the entry of a sovereign, with the conventions and details of the Elizabethan and Dutch stages. Much suggestive information lies in this part of the book, and here he opens a branch of study no future theatrical historian will be able wholly to ignore.

One sometimes is inclined to question the value of his frequently "stemming" (to use his word) *this* convention from *that* prototype, and of leading all back to the Hellenistic stage façade. And one might have welcomed a little more of the theatrical technician in the discussion, as against the professor. Take, for instance, the author's statement that "In the English theatre . . . the inner stage persisted into the eighteenth century, with small wings and another shutter, duplicating in reduced size the perspective system of the main stage." (p. 191). Present knowledge strongly suggests that the scene behind the English "back shutter" was of an entirely different nature from the shutter scene itself, and gave rise later to a completely new phase of scenic history.

When, on the theoretical side, he reaches, as all students must, that strange distinction between conventional, decorative stage-setting and illusionistic scenery, he is inclined to lump all perspective scenery as essentially realistic, confining conventionalism to earlier formal stages. Yet full illusion of reality in scenery is comparatively rare and comparatively late. True, perspective scenery creates illusion (rather than allusion), but not inevitably the illusion of *reality*—its first purpose was that of all scenery; to create the illusion of *fantasy*.

This quality Mr. Kernodle admirably expresses when he says: "The principle function of setting was to give an ornate decoration, a festival mood, to a show." Yet when he comes to the Renaissance at its height, he can state "The purpose of perspective scenery" is "to create the illusion of an actual place," not remarking that the very point he gives as a justification (that one book on early perspective was called *Lo Inganno de gl'occhi*) sorts far better with the other idea that the delight the designer took in perspective lay not in its representation of "an actual place" as in its magic of "the deception of the eye."

This is not a conclusive book without technical supplementation, but it is one that every technical student of stage history should know, and know well.

Post-Reformation Royal Arms in Norfolk Churches, by Stanley J. Wearing, F.R.I.B.A., with historical notes by Percy Millican, F.S.A., *in* Norfolk Record Society, vol. XVII (1944). pp. 1-43.

Mr. Wearing has fulfilled a useful service to the ecclesiology of his county by recording these presentations of the Royal Arms in about 80 Norfolk churches. Up to comparatively recent years destruction of them was preceding apace. Reforming parsons and negligent parishioners were often glad to clear out grimy obscure relics of a time when Establishment meant more to the Church than its spirituality and they were not in the least moved by the value of these crude but lively decorations as examples of folk art—nor even, we may suppose, drawn to smile sympathetically at rustic efforts to portray so hard a subject as lion rampant guardant.

There seems to be some doubt when Royal Arms were first compulsorily placed in churches, but it is certain that they often appeared as voluntary exhibitions of loyalty before the Reformation. Mr. Wearing refers to a surmise that there was an Order in Council of Edward VI compelling the substitution of Royal Arms for the ancient roods.

Mr. Wearing and Mr. Milligan, who contributes historical notes, record arms in about eighty churches, from Elizabeth's reign to the present day—contemporary arms are not recorded individually. The great majority is of arms painted on canvas or panels, four examples are carved in stone and a number more are in glass.

Eighteen arms are illustrated by photographs or drawings, including a drawing by Mr. Wearing of the remarkable display of painted arms at Tivetshall St. Margaret of 1587, filling the twenty-foot span over the chancel screen.

The Preservation of Terraced Houses in Bath by Adaptation to Meet Present-day Requirements. Society for the Protection of Ancient Buildings in collaboration with the Bath Preservation Trust. Foolscap. 15 pp. typescript and 8 pp. map, plans and photos.

A report, already published in periodicals, urging the retention of Bath's Georgian terraces by conversion as flats; illustrated by Royal Crescent, New King Street and Northampton Street, for which conversion plans are given. Related problems of traffic and road planning are touched on and a note on finance lists the four main factors which need consideration. The signatories are Messrs. J. E. M. Macgregor, Marshall Sisson, Birdwood Willcocks, F/F, and J. Lees Milne.

PROFESSIONAL PRACTICE

Architectural Practice and Procedure, by Hamilton H. Turner, F.S.I. 3rd Ed. 8vo. xiv + 374 pp. London: Batsford. 1945. 18s.

REVIEWED BY CHARLES WOODWARD [A.]

The third edition of this manual has been revised and enlarged, the additions including chapters on the R.I.B.A. Form of Contract 1939 and the London Building Acts, together with an appendix containing a type specification, a short form of contract, a schedule of dilapidations, form of a report in property and a form of inventory and valuation of household effects.

The main part of the work concerns architectural practice and, written as it is from the author's own experience, deals with the practical side of an architect's business by one who necessarily has a somewhat intimate knowledge of it. The value of the book to students is that the many pitfalls that lie in the path of a practising architect are clearly pointed out and the advice given in commendably forceful language should be of much assistance to a young architect starting on his professional career.

The R.I.B.A. Contract is examined in detail, the Form being that where quantities are part of the contract. In this Form the specification is not one of the contract documents and therefore should not be endorsed as is suggested. The suggestion that clauses in the bills of quantities drafted to conflict with clauses in the form of contract should be worded in the clearest language is a sound suggestion, but in the event of dispute the conditions of contract would prevail as is stated in clause 10. The only provisions in the contract for quantity surveyor's fees are those for preparing quantities and for measuring and valuing variations. If in actual practice, as is said, the fees for valuing for interim certificates are added to the contract sum without the knowledge of the building owner the architect would have exceeded his authority, and students should have been clearly warned that the contract defines their powers and that they cannot vary them without the consent of the parties to the contract. Dealing with clause 24, it is correctly stated that the issue of the final certificate is conclusive evidence as to the sufficiency of the works and materials (subject to the exceptions set out in the clause). In the next paragraph it is said that the last paragraph of the clause provides that no certificate is conclusive evidence that any works or materials are in accordance with the contract. The words "save as aforesaid" in this paragraph have been overlooked. These words preserve the position that an interim certificate is not, but a final certificate is, conclusive evidence as to works and materials being in accordance with the contract (subject to the exceptions).

The chapter on fees needs comment. It is suggested that consultants' fees may be included in the bills of quantities and paid by the builder on the architect's certificate. This procedure would need the consent of the building owner, and in calculating the architect's fees the consultant's fees would have to be omitted from the contract sum so as to avoid fees on fees.

Party wall procedure under the London Building Act, 1939, is explained, and it would have been useful to quote the provision for payment for the additional use of a party wall. This is that "unless otherwise agreed between the building and adjoining owners or pro-

vided for in the award, regard must be had to the cost of labour and materials at the time the additional use is made."

The type specification is of practical use to a student, though as stated the preliminary clauses differ from clauses in the R.I.B.A. Form of Contract. Paragraphs 10 and 31 of the specification are not easy to reconcile.

The chapters on dilapidations and fire insurance are written clearly and instructively, and should be helpful to a student who finds these subjects not exactly inspiring.

The third edition will by reason of the enlargements and additions prove of greater use than the previous editions.

Town and Country Planning Act, 1944. Annotated by H. A. Hill. Reprinted from Butterworth's Emergency Legislation Service. 8vo. xii + 131 pp. London. Butterworth. 1945. 10s. 6d.

Mr. Hill's annotation of the Town and Country Planning Act 1944 is the first to be published and will be widely welcomed. The body of the book follows the usual plan of such works : the sections of the Act are printed in full and followed by the author's notes, which are detailed and authoritative. In an introduction of nineteen pages previous planning Acts from the Housing Act of 1909 are briefly described and related to the present measure and planning procedure under the Acts of 1932 and 1943 explained in some detail. The main features of the 1944 Act are described and the points where the 1932 Act is amended are noted.

More Advanced Quantity Surveying, by Arthur J. Willis. Third edition. Revised. 8vo + 280 pp. + separate portfolio plates. Crosby Lockwood. 1945. 25s.

Mr. Willis's *Elements* and *Example* and the earlier editions of his *More Advanced Quantity Surveying* are all standard works invaluable as text-books for the learner and as handbooks for the practitioner. In this third edition of *More Advanced Quantity Surveying* detailed corrections have been made to some of the dimensions and a few alterations have been made to clarify the text. Otherwise the book is as before, with the addition of some notes on quantities for prefabricated work.

Drawing Office Organisation. British Standard 1100 pt. 9. 1944. 8vo. 36 pp. B.S.I. 1944. 2s.

A guide to the organisation and layout of an industrial design shop or drawing office, useful to architects partly for the considerable amount of information on drawing office technique and equipment and filing methods which can be applied to an architect's office and also as a guide to the planning of drawing offices in industrial schemes.

HOUSING

Approved House Designs, by the Royal Incorporation of Architects in Scotland (for Department of Health for Scotland). sm. 4to. 44 pp. H.M.S.O. Scotland. 1945. n.p.

The R.I.A.S. and the C.S.I. (Scottish Branch) were invited by the Secretary of State for Scotland to assist the speedy fulfilment of housing plans by " preparing a range of house designs, including elevations and complete working drawings, and relative schedules of quantities." This pamphlet illustrates the result by perspective views and plans of 27 types with 11 additional variants in stone instead of brick or with flat instead of pitched roofs. Any architect entrusted with local authority housing can obtain working drawings at a fee. The designs cover all possibly needed types for four- and five-roomed houses and bungalows.

Housing Before the War and After, by M. J. Elsas. 8vo. 94 pp. Staples Press. Second edition 1945. 7s. 6d.

A new edition with additional chapters on (ch. 6), the number of houses required after the war and (ch. 7), a plan for rent subsidies. Mr. Elsas estimates demand up to 1965 1.1 million, plus dwellings for old people 1.4 million, plus replacement of out-of-date houses 3.7 million, plus dwellings for sharing families and to assure a sufficient number of vacant dwellings 0.6 million—total 6.8 million dwellings.

Mr. Elsas proposes that rent subsidies should be calculated nationally, not locally, and over all houses whether privately or publicly owned.

The basic principle of rent subsidy is to assess the subsistence expenditure needed to support a family with food, clothing, fuel, light, household and personal necessities. Rent being paid out of the difference between income and this subsistence expenditure.

The Newer Heat Plans for Housing. Coal Utilisation Joint Council. 4to. 24 pp. C.U.J.C. 1945.

An illustrated booklet describing improved solid fuel burning appliances for domestic open fires and cooking, including a continuous burning open fire, multiple duty units, insulated cookers. House plans illustrated. Comparison of running costs to show economy despite higher costs of appliance. Notes on fuel storage.

Housing and Community Planning : a series of lectures at McGill University. 1944. 8vo. 210 pp. Montreal. 1944.

The full publication of lectures at McGill, planned by the School of Architecture with the co-operation of the Government of the Province of Quebec. The series was opened by F. C. James, Principal of McGill, on the economic background of housing and community planning. Seventeen other papers by leading United States and Canadian authorities deal with planning and housing largely from the economic, social and governmental point of view to ascertain Canadian needs and possibilities for action. Among the papers of general interest are : Measurement of housing needs, supply and post-war requirements by Dr. O. J. Firestone, Senior Research Assistant, Advisory Committee on Reconstruction, Ottawa ; Regional planning and the growth of Physical planning by Professor John Bland [*A.*] ; and Community Street systems by Professor R. de L. French, Professor of Highway and Municipal Engineering, McGill.

The Housing Problem, by Australian Army Education Service. Part I in three separate pamphlets. Part II similarly. 8vo. 130 pp. in all. Australian Army Education Service, Melbourne. 1945.

This is among the best produced popular expositions of housing received by the Library. The first part is " What has to be done." Chapter I, on the scale of demand and who will build the houses, represents the immediate need to be over 224,000 (for a seven millions population) ; Chapter II, on the way Australian slums developed, states the chief causes to be poverty, exploitation and speculation, lack of finance, lack of technique and efficiency in building and failure to think in community terms. Chapter III is on the size of slums and the qualitative definitions and the effects on the people.

The second part is " How shall we tackle it ? " Chapter I outlines slum clearance in other countries and hitherto in Australia, rather optimistically presented. Chapter II is on the problems of State and Commonwealth co-operation, which is regarded as essential, and on the finance problems. The last chapter on " Remaking Australia," with large reference to England, touches on wider questions of planning and the need for popular education in housing.

COMMUNITY RESTAURANTS

Community Restaurants in Design. Published by the London Council of Social Service. 4to. 16 pp. + 2 folded plans. 1945. 2s. 6d.

A number of Local Authorities intend to apply for power to continue a limited service of British Restaurants, primarily for the use of industrial and commercial workers, and it is probable that some commercial caterers will open similar restaurants after the war. In 1943 the London Council of Social Service, having these possibilities in mind, carried out a detailed survey of some 40 Communal Restaurants in London, and subsequently issued a report. The present publication, *Community Restaurants in Design*, which is in the nature of a sequel to the previous report, gives alternative plans for a " Model " Community Restaurant, together with a written report and short appendices on Construction and Costs.

The plans were prepared by Mr. L. H. Bucknell and Miss Ruth Ellis [*F/F.*] for the London Council of Social Service, working in conjunction with the Council's Research Group on Communal Feeding. They are intended to demonstrate the main principle of design.

The two plans differ little in demand on ground space or estimated cost ; but one of them is an " open " plan with better opportunities for lighting and ventilation. Either is suitable for use as a Community Restaurant only, or else in association with a wider scheme in which such a restaurant was one of the features.

In the dining hall much attention is paid both to the comfort of the diners and to the convenience of the staff.

One interesting design feature is that the service counter is so arranged as to give the diners a free view of the kitchen. This is thought desirable because the type of customer who frequents these restaurants likes to know how his food is being prepared and to establish friendly relations with the staff.

Review of Periodicals

1944-45—III

BUILDINGS (COLLECTIVELY): HEIGHT AND FORM

ENGINEERING NEWS-RECORD, *1944 Dec. 28, pp. 65-7 :*
New York City amends zoning law. Report on first major changes in 28 years. Additional restrictions on height, bulk and area of new buildings. Diagrams.

CIVIL (generally); PUBLIC WORKS BUILDINGS

ROYAL ENGINEERS' JOURNAL, *1945 Mar., pp. 2-8 :*
The planning and control of works services. Time and progress, labour schedules, etc.

ARCHITECTS' JOURNAL, *1944 April 19, p. xliv :*
Ministry of Works. Chart of organisation.

PENCIL POINTS, *1945 Mar., pp. 71-2 :*
Maintenance buildings, Green Belt, Maryland, by V. Homsey and E. H. Klaber. Local authority works depot, incl. storage, machine and carpenters' shops, etc.

GOVERNMENTAL, CIVIC

ARCHITECTURAL REVIEW, *1945 Feb., pp. 34-8 :*
The House of Commons : traditional seating in the H. of C. Article by J. M. Hastings. Illusd.

COUNTRY LIFE, *1945 Feb. 9, pp. 238-40 :*
The new House of Commons. Article by Hamilton Kerr, M.P. Illusd. photos of model of old Palace of Westminster.

BUILDER, *1945 April 27, p. 328 :*
Accommodation in the Palace of Westminster : Select Committee's proposals for completion of Barry designs by enclosing Palace Yard. Illusd.

CALIFORNIA ARTS AND ARCHITECTURE, *1944 Dec., pp. 23— :*
Legislative Palace, Ecuador : competition design by Rapson & Teague, illusd. and analysed in detail.

S. AFRICAN ARCHITECTURAL RECORD, *1944 Mar., pp. 64-79 :*
City Hall, Cape Town. Detailed analysis of requirements for a large city hall by K. H. Gardner.

ARCHITECT AND BUILDING NEWS, *1945 Mar. 9, pp. 155-7 :*
Temporary magistrate's court, Coventry, by City Architects' Dept.

OFFICIAL ARCHITECT, *1945 Mar., pp. 140-5 :*
Post-office buildings in Switzerland.

WERK (Zürich), *1945 Aug., pp. 253-60 :*
Swiss Office of Posts, Telegraphs and Telephones. Architectural work. Note on organisation of building dept. Illusns. and descriptions of automobile depot, Berne-Stöckacker. Large garage and repair shops built 1939-40 ; modernisation of Mont-Blanc P.O., Geneva, by A. Guyonnet ; small post offices elsewhere.

ARCHITECTURAL FORUM, *1944 Dec., pp. 85-95 :*
U.S. Army post office. Vast building on site of Madison Sq. Garden Bowl, N. York. Architect-Engineer, A. Hopkins and Associates. Structure, plan and design well illusd.

ROYAL ENGINEERS' JOURNAL, *1945 Mar., pp. 47-52 :*
Fitting the army back into barracks. Historical note on barracks design, etc., 1918-39.

WOOD, *1945 Mar., pp. 68-9 :*
U.S. Army prefabd. hut for use in all climates.

AMERICAN CITY, *1944 Dec., pp. 71-3 :*
Design and equipment of city police stations. Article. Illusd.

ARCHITECTURE ILLUSTRATED, *1945 Feb., pp. 16-18, 21-3 :*
Police stations for Devon C.C., by H. V. de Courcy Hague. Torquay and Totnes.

ARCHITECT AND BUILDING NEWS, *1945 Mar. 9, pp. 160-3 :*
Police headquarters, Taunton, Somerset, by R. O. Harris, County Archt.

ARCHITECT AND BUILDING NEWS, *1945 Feb. 16, pp. 114-6 :*
Gold Corner (West Huntspill, Somerset) Pumping Station, by R. O. Harris [*A.*], County Archt., Somerset. Illusd.

ARCHITECTURAL REVIEW, *1945 April :*
Electricity in its regional setting. Spec. No., incl. articles : The grid and siting of power stations, by H. Quigley ; Industry and its environment, by Lord Forrester ; Siting of industry, by Prof. G. H. J. Dyash ; Power stations in the landscape, by G. A. Jellicoe ; Power, people and plans, by T. Sharp, etc. ; and on special aspects of Highland industrial developt. Illusd.

ARCHITECT AND BUILDING NEWS, *1945 Mar. 23, pp. 192-4 :*
Primary electricity sub-station, Coventry, by City Archt.'s dept.

BYGGMÄSTAREN (Stockholm), *1945 No. 3, pp. 54-5 :*
Transformer station, Malmö, by Hans Westman.

COMMERCIAL

ARCHITECTURAL REVIEW, *1945 Mar., pp. 89-91 :*
Shops. Article by John Piper on country shops, their decoration and colour. Illusd.

ARCHITECTS' JOURNAL, *1945 April 5, pp. 265-6 :*
Showroom for "British Filters," Berkeley St., London, by B. Peake.

PENCIL POINTS, *1945 Mar., pp. 85— :*
Wholesale display and sales rooms for Bernhard Ulmann. Linen, yarns, etc.

ARCHITECTURAL RECORD, *1944 Nov., pp. 90-110 :*
Department stores. Building types study 95. Planning, equipment, lay-out, air-conditioning, lighting, lifts and internal transportation.

ARCHITECTURAL RECORD, *1945 Mar., pp. 99-116 :*
Offices. Articles and illusns. modern U.S. office practice.

PENCIL POINTS, *1945 Mar., pp. 67-70, 92-4 :*
Factory offices, Bath, Maine, by A. J. Harriman and Genl. Radio Co. offices, Cambridge, Mass., by D. des Granges.

ARCHITECTURAL RECORD, *1945 Feb., pp. 90-101 :*
"Home loan H.Q." Bdg. types study 97. Small banks and saving societies' offices.

ARCHITECTURAL RECORD, *1945 Mar., p. 87 :*
Banks. Building types study 99. Articles : What bankers want of their buildings ; fundamentals in bank plg. Illusd. 51st St. Branch National City Bank, N. York, by Walker & Gillette. Time-saver Standards of specialised counter equipment.

TRANSPORT

ARKHITEKTURA S.S.S.R. (Moscow), *1944 No. 8, pp. 31-9 :*
Finishes and decorative work in the Moscow Metro stations recently completed. Article by M. Zelenin. Detailed illusn. of Elektrozavodskia Stn.

JNL., INSTN. OF HEATING AND VENTILATING ENGINEERS, *1944 Nov.-Dec., pp. 234-57 :*
The principles of ship ventilation and warming in theory and practice. Paper by R. McDonald.

PENCIL POINTS, *1944 Dec., pp. 75-7 :*
Truck garage for Canada Packers, Ltd., Toronto, Ontario, by Arthur, Fleury, Piersol.

ARCHITECTS' JOURNAL, *1945 Feb. 8, p. 114 :*
Multi-storied car park, Ballinger Co., Philadelphia. Plans and view.

PENCIL POINTS, *1945 April, Building Products facts supplt. :*
Garage doors in stock douglas fir.

AMERICAN CITY, *1944 Dec., pp. 13, 67 :*
Airports : master plan for stage development. Illusd. "Municipal flight strips." Article by J. D. Millar, Depy. Minister of Highways, Ontario Province.

ARCHITECTURAL RECORD, *1944 Dec., pp. 78-83 :*
"Airplanes, Airports . . ." Article by Editors of *Aero Digest* on airport design. Illusd.

JNL., INSTITUTION OF CIVIL ENGINEERS, *1945 Jan., pp. 100-49 :*
The design of land airports for medium and long-distance civil air transport : paper by A. Shaw Maclaren, A.M.Inst.C.E. Runways, field paving, clearances, equipment, hangars and workshops. Theoretical lay-outs.

AMERICAN CITY, *1945 Mar., pp. 93-4 :*
New airports : planning low first costs, upkeep. Notes on runway length.

AMERICAN CITY, *1945 Jan., pp. 74-5 :*
"Low-down on airports." Note on convention of Natl. Aviation Trade Assn., St. Louis.

ARCHITECT AND BUILDING NEWS, *1945 April 20, pp. 46-8 ;*
ARCHITECTS' JOURNAL, *April 12 ;*
ARCHITECTURAL DESIGN AND CONSTRUCTION, *May, inset ;*
BUILDER, *April 13, pp. 289-91 ;*
BUILDING, *May, p. 123 :*
International airport for London. Competition designs for airfield and terminal bdgs. organised by *The Aeroplane*. Illusd. Winning design by H. J. Coates [*A.*], E. R. Morgan and F. W. Smith [*A.*].

TEKNISK TIDSKRIFT (Stockholm), *1945 Feb. 24, pp. 205-33 :*
Airports. Articles relating to provision of transcontinental port for Stockholm ; projects illusd. Detailed studies of runway lay-out for heavy freight traffic.

JNL., ROYAL ARCHITECTURAL INSTITUTE OF CANADA, *1945 Jan., pp. 14-15 :*
Municipal airport, Edmonton, Alberta. Administration building by J. Martland.

ARCHITECTURAL FORUM, *1945 Mar., pp. 97-106 :*
Air Transport Command, International air terminal buildings, Potomac, Washington, D.C., by Ch. M. Goodman. Advanced design in plan and structure of great terminal station built in 4 months.

INDUSTRIAL

SCOPE. *1945 April, pp. 48-56 :*
Industrial architecture, by R. Frankel. General survey of current problems and opportunities.

BUILDING, *1945 April, pp. 88-93 ; May :*
Post-war factories series by Rudolf Frankel. Pt. 1, location and planning. Illusd. 2, Equipment and design.

ARCHITECTURAL FORUM, *1945 Feb., pp. 113-28 :*
Aviation factories built by Austin Co. Continuation of article on Austin Co. in Jan. issue. Construction, testing stations, etc.

ARCHITECTURAL RECORD, *1945 Feb., pp. 66-73 :*
Pratt & Whitney aircraft factory, by Albert Kahn, Inc. Illusd. No plan.

ARCHITECTURAL RECORD, *1944 Nov., pp. 84-9 :*
Curtiss Wright Aircraft Plant, Columbus, Ohio, by Albert Kahn, Inc.

PENCIL POINTS, *1944 Dec., pp. 83-5 :*
Aviation engine factory, Chevrolet Div. General Motors, Tonawanda, N.Y. Albert Kahn, Assocd. Archts.

PENCIL POINTS, *1945 Mar., pp. 79-84 :*
Diesel engine plant for U.S. Navy by Albert Kahn. Single hall factory with offices. Editorial analysis of present advanced character of U.S. industrial archre.

ARCHITECT AND BUILDING NEWS, *1945 April 13, p. 23 :*
Electricity Dept. workshops, Longford, for City of Coventry, by City Archt.'s dept.

MODERN HOSPITAL (Chicago), *1945 Marl. pp. 104-6 :*
" Stop those laundry leaks." Article by H. Toombs, chief engineer, Stevens Hotel, Chicago, on laundry heat requirements and design.

ENGINEERING NEWS-RECORD, *1944 Nov. 16, pp. 93-6 :*
Notes on industrial waste treatment and disposal. Extracts from papers at Sewage Wks. Assn. conference.

WELFARE : HOSPITALS, &c.

ARCHITECTURAL DESIGN AND CONSTRUCTION, *1945 Feb., pp. 45-51 :*
Small teaching hospital. Reprint of part of plan analysis booklet by Architect's Co-operative Partnership for St. Albans and Mid-Herts. Hospl.

MODERN HOSPITAL (Chicago), *1945 Mar., pp. 65-7 :*
" Only the patient counts " : radical ideas on hospital design, by Mies van der Rohe. Hospital provision and city planning.

HOSPITAL AND NURSING HOME MANAGEMENT, *1945 Jan., pp. 6-7 :*
Proposed new hospital, Altrincham, Cheshire. Plan by H. S. Fairhurst and Son [*F.*].

TEKNISK TIDSKRFIT (Stockholm), *1944 July 1, pp. 777-812 :*
Södersjukhuset : Stockholm general hospital by Cederström. Detailed technical articles. The sociological basis. Plan and lay-out. Equipment and standardisation. Construction. Mechanical equipment.

ENGINEERING NEWS-RECORD, *1944 Dec. 14, pp. 90-2 :*
" Building a permanent hospital in war-time " ; at Norfolk, Va. Archt., J. R. Edmunds, jr.

ARCHITECTURAL FORUM, *1945 Feb., pp. 91-6 :*
Extension, Little Traverse Hospital, Petosky, Mich., by Skidmore, Owings & Merrill. 4- and 2-bed wards, doctors' offices and treatment rooms, sun deck.

MODERN HOSPITAL (Chicago), *1945 Jan., pp. 69-72 :*
Hospital, Seattle, U.S.A, by G. W. Stoddard. 200 beds gen. hospl., 4-bed wards. Illusd.

OFFICIAL ARCHITECT, *1945 Feb., pp. 86-91 :*
Children's Hospital, Royal Alexandra Hospital, Camperdown, Sydney, N.S.W. Architect to P.W.D. Illusd.

MODERN HOSPITAL (Chicago), *1945 Feb., pp. 62-4 :*
Institute of Cardiology in Mexico City Hospital Centre : plans and description.

MODERN HOSPITAL (Chicago), *1945 Jan., pp. 49-62 :*
" Suspect nurseries " : a case history of experience, St. Luke's Hospl., Chicago. Administrative problems in prevention of infant mortality, with plans of " suspect nurseries " for new-born.

HOSPITAL AND NURSING HOME MANAGEMENT, *1945 May, pp. 148— :*
Building a hospital : why co-operation between architect and hospital committee is essential. Article by C. Parkes, Govt. archt., N.S. Wales.

MODERN HOSPITAL (Chicago), *1945 Mar., pp. 49-64 :*
40-bed general hospital. Winning designs in competition promoted by MODERN HOSPITAL. Plans and genl. descriptions.

MODERN HOSPITAL (Chicago), *1945 Mar., pp. 90-1 :*
Hospital stock organisation. Lay-out of hospital stock room.

MODERN HOSPITAL (Chicago), *1945 April, pp. 43-59 :*
Rural Health Centre. Prize designs in Mod. Hospl. Competition. 1st, S. E. Lunden and L. C. Dixon. Centre for 30,000 population in 15 m. radius.

BUILDING AND ENGINEERING, *1944 Nov. 24, pp. 24-5 :*
Nurses' home, Katoomba, Blue Mts. district.

HOSPITAL AND NURSING HOME MANAGEMENT, *1945 Jan., pp. 5-1 :*
Circular operating theatres : their value has been proved. Article by J. O. Cederberg. Marinette Gen. Hospl., Wisconsin. Illusd. Plan.

TOWN AND COUNTRY PLANNING, *1944-5 Winter, pp. 174-5 :*
" Real homes for old people." Short article by H. E. Seaton.

HEALTH & RECREATION : PUBLIC RESORT (RESTAURANTS, BATHS, &c.)

OFFICIAL ARCHITECT, *1945 Mar., pp. 130-9 :*
Buildings for miners' welfare (C. G. Kemp, chief architect). Pit-head baths, community centres, swimming baths.

PENCIL POINTS, *1945 Jan., pp. 88-90 :*
Café Borranical. Project, illusd. by model, by Melbourne archt., A. A. Carrara, for riverside café incorporating large mechanically movable platforms and screens to give sun terraces or enclosed room.

BUILDER, *1945 Mar. 30, pp. 250-1 :*
" King Alfred " public-house, Bellingham, by R. G. Muir [*F.*].

ARKITEKT (Istanbul), *1944 No. 11-12, pp. 245-9 :*
Open-air swimming bath, Ortaköy, by H. Femir. Illusd.

RECREATIVE (including THEATRES, &c., COMMUNITY CENTRES)

JNL., INDIAN INSTITUTE OF ARCHITECTS, *1944 Nov., pp. 24-5 :*
Temporary stage and open-air auditorium for the Marathi stage and drama centenary celebrations.

ARCHITECTURAL FORUM, *1945 Feb., pp. 129-38 :*
Theatre, Malmö, Sweden, by Lallerstedt, Lewerentz & Hellden. Full description and details of one of most advanced theatres in world. (Further ref.) See also ref. BYGGMÄSTAREN.

IRISH BUILDER AND ENGINEER (Dublin), *1945 Feb. 10, pp. 59-60 :*
Malmö City Theatre : description by A. Breithel. Illusd.

ELECTRICAL SUPERVISOR, *1945 Feb., pp. 93-8 :*
Theatre lighting : some installation, maintenance and operating problems. Paper by L. G. Applebee. Illusd.

ARCHITECT AND BUILDING NEWS, *1945 Jan. 19, pp. 41-3 :*
BUILDER, *Jan. 19, pp. 47-9 :*
The playhouse through the ages. Exhibition by British Drama League described. Illusns. of theatre, 1788, Richmond, Yorks. Lutyens design for national theatre, and important design made for C.E.M.A. for urban cultural centre, inc. theatre, restaurant, exhibition hall, etc. (Lutyens thea. also in BUILDING, *Feb., pp. 32-4.*)

REVISTA DE ARQUITECTURA (Buenos Aires), *1944 Nov., pp. 489-500 :*
Stage scenery design and architecture. Article by L. M. Campos, illustrating stage design in Europe and Argentine.

NUESTRA ARQUITECTURA (Buenos Aires), *1944 Dec., pp. 408-17 :*
" Premier " cinema, Buenos Aires.

ARQUITECTURA (Montevideo), *1944 Aug., pp. 55-7 :*
Stadium, Campo de Deportes, for National Football Club, Montevideo, by Guerra and Clerc. Sports centre, stadium for 40,000, basket-ball stadium for 12,000.

JNL., ROYAL ARCHITECTURAL INSTITUTE OF CANADA, *1945 Feb., pp. 21-34 :*
Community centres. Articles : C.cs. in Canada by M. Adeney (organisation, service, etc.). Some facts about c.cs. by L. Scott (plan and equipt. data). C.cs. of the future and c.cs. in U.S. war hsg. projects. Illusd.

ARCHITECTURAL DESIGN AND CONSTRUCTION, *1945 April, pp. 101-2 ;*
BUILDING, *Feb., p. 34 :*
Community centres. Article by Flora Stephenson illusg. C.E.M.A. project for model c.c. and theatre. (BLDG. :) C.E.M.A. project.

BUILDER, *1945 Mar. 23, p. 231 :*
Village hall, Sands, High Wycombe. Project by C. H. Watson. 440 seats.

CALIFORNIA ARTS AND ARCHITECTURE, *1944 Dec., pp. 32-6 :*
Arts and crafts centre : project by J. R. Davidson ; and community centre, Wilmington, for Los Angeles Hg. Authority and F.P.H.A.

CALIFORNIA ARTS AND ARCHITECTURE, *1945 Jan., pp. 34-6 :*
Recreation centre (community centre) for 300 workers, Mare Island, near Vallejo, Calif. Designed by V. de Mars, of Farm Security Admn. Illusd.

IRISH BUILDER AND ENGINEER, *1944 July 29, pp. 298-300 :*
Amenities for the countryman competition. Village hall and rural houses.

COUNTRY LIFE, *1945 Mar. 23, p. 514 :*
Tattersall's horse sale-ring, Newmarket. Design for rebuilding. Architect unstated.

BUILDING, *1945 Jan., pp. 26-7 :*
Project for sports pavilion by B. Peake [*A.*], in collaboration with E. Maxwell Fry [*F.*], for city company.

ARCHITECTURAL RECORD, *1945 Feb., pp. 74-9 :*
Jai Alai sports centre, Manila, by Wurdemân & Becket. Large covered hall for pelota (Basque ball game). Restaurants.

ARCHITECTURAL REVIEW, *1945 Feb., pp. 49-60 :*
Roundabouts : demountable Baroque. Article on the buildings and machines of travelling fairs, by Eric Brown, with drawings by Barbara Jones. The first detailed study.

EXHIBITIONS, MEMORIALS, BRIDGES

ARCHITECTS' JOURNAL, *1945 Mar. 22, pp. 227-31 :*
Touring exhibition by Min. of Information (Exhibition Section, Misha Black, director) to publicise Army, described and illusd. Touring version of exhibition held in London 1943.

WERK (Zürich), *1944 Aug., pp. 247-51 :*
"Arbeitsgeschaffung" (Employment) Exhibition by Swiss Government. Illusd. and described by O. Zipfel.

ARCHITECTS' JOURNAL, *1945 April 5, pp. 263-4 :*
Adjustable exhibition screens, designed for American Housing Exhibition at R.I.B.A. Illusd.

ARCHITECTURAL FORUM, *1944 Dec., pp. 96-100 :*
War memorials. Note on Allies' ideas.

BYGGMÄSTAREN (Stockholm), *1945 No. 4, pp. 60-3 :*
Blaiseholmsbron bridge or tunnel, Stockholm. Discussion in articles by E. Sundahl and C. H. af Klercher. Illusd.

ENGINEERING NEWS-RECORD (News Issue), *1944 Nov. 23, pp. 4-5 :*
Suspension bridge over river Min, China. 552 m. span of twisted strands split bamboo. Illusn.

ARCHITECTURAL RECORD, *1944 Dec., pp. 84-8 ;*
ENGINEERING NEWS-RECORD, *1945 Jan. 11, pp. 111-5 :*
Architecture for a highway project : designs for bridges and fly-overs in connection with Detroit Civic Centre scheme. Illusd. E.N.R. publicatn., with tech. details of highway design.

RELIGIOUS, SEPULCHRAL

BUILDER, *1945 Feb. 16, pp. 132-3 :*
Church of Corpus Christi, Whitehall, Dublin, by J. J. Robinson and R. C. Keefe.

BUILDING, *1945 Mar., pp. 66-7 :*
R.C. church, Newbridge, Mon., by P. D. Hepworth.

BUILDER, *1945 April 20, pp. 311-4 :*
St. Mark's Church, Vermont, U.S.A., by Freeman, French & Freeman. Cruciform plan with central altar.

ARCHITECTURAL REVIEW, *1945 May, pp. 135-8 :*
1st Church of Christ Scientist, Zürich, by H. Hofman and A. Kellermüller.

CALIFORNIA ARTS AND ARCHITECTURE, *1945 Jan., p. 44 :*
Project for small church (Christian Reformed Church), by Whitney R. Smith.

PENCIL POINTS, *1944 Dec., pp. 46-58 :*
Reorganised Church of Jesus Christ of Latter Day Saints, by A. B. Dow.

ARCHITECT AND BUILDING NEWS, *1945 May 11, pp. 83-4 :*
ARCHITECTS' JOURNAL, *June 7, pp. 429— ;*
BUILDER, *May 11, pp. 370-1 ; May 18 :*
Coventry Cathedral. Ryl. Academy designs by Sir Giles Scott. Illusd.

MIMARLIK (Ankara), *1944 No. 5, p. 3 :*
Mausoleum to Atatürk. Note and illus. of model.

SCHOOLS

JNL., ROYAL ARCHITECTURAL INSTITUTE OF CANADA, *1944 Nov., pp. 243-67 :*
Schools. Special No., incl. articles nursery schools, needs, purpose, methods, plan, spirit, by J. A. Murray. Schools relation to neighbourhood (neighbourhood plg.) by J. F. C. Smith. Plg. an elementary sch. by H. Steele. Secondary schools by B. R. Coon. And articles on heating, ventilating and lighting and acoustics. A useful reference.

ARCHITECT AND BUILDING NEWS, *1945 Mar. 2, pp. 141-3, and subsequent issues :*
Schools. Planning data in new series "Current notes on planning," by "E. and O.E."

BUILDING, *1945 April, pp. 100-4 :*
Standards in school design : work prepared for Polish Ministry of Education. Architect, R. Soltynski.

ARCHITECTURAL DESIGN AND CONSTRUCTION, *1945 Jan., pp. 3-8 :*
The school in Sweden. Article by C. G. Stillman illustrating Eriksdal Sch., Fredhall Sch., Southern Communal Sch., Northern High Sch., all at Stockholm.

ARCHITECTURAL RECORD, *1945 Mar., pp. 74-9 :*
El Tejon School, Lebec, Calif., by F. Wyncoop & Assocs. Incs. gymnasium-assembly hall.

PENCIL POINTS, *1944 Dec., pp. 77-82 :*
Sacred Heart School, Oswego, Oregon, by Belluschi. Village school ; 3 classrooms with allowance for additions.

EDUCATION, *1945 Jan. 26, pp. 128-31 :*
Schools in Brazil. Article by S. Loweth [*F.*]. Illusd.

JOURNAL OF EDUCATION, *1945 Jan. :*
Ministry of Education's draft building regulations. Commentary by C. Birchenough, Chief Inspector for Kent.

ARCHITECTURAL FORUM, *1945 Feb., p. 182 :*
Prefabd. schoolhouse. Complete unit mfd. by E. J. Kump & Co. Illusd.

KEYSTONE, *1945 April, pp. 12-4 :*
Elementary schools : outline of development of the school plan, by J. A. Godfrey.

SOUTH AFRICAN ARCHITECTURAL RECORD, *1945 Jan., pp. 2-7 :*
Secondary school (boys'), Chislehurst ; by S. H. Loweth [*F.*], Kent county architect.

LABORATORIES

BYGGMÄSTAREN (Stockholm), *1945 No. 1, pp. 4-20 :*
Swedish State Veterinary Institute and Experimental Laboratories, Stockholm, by Gunnar Asplund. A large scheme of great architectural quality fully described and illusd. Animal labs., anatomy dept., stables, kennels, cages, etc.

MUSEUMS ; LIBRARIES

ARCHITECT AND BUILDING NEWS, *1945 Feb. 23, p. 132 :*
Aviary, Zoological Gardens, Rome. Described and illusd.

ARCHITECT AND BUILDING NEWS, *1945 April 6, pp. 7-8 :*
"Concerning the Soane Museum." Article by Katherine Esdaile.

LIBRARY ASSOCIATION RECORD, *1945 Feb., p. 31 :*
Some notes on film storage, by Oliver Bell, Director, British Film Institute, Librarian Nat. Film Library.

RECORDING STUDIOS ; SOCIETIES' BUILDINGS

BUILDER, *1945 Mar. 2, pp. 171-3 :*
Recording theatre, Denham Film Studios, by F. F. Doyle [*L.*]. Illusd.

OFFICIAL ARCHITECT, *1945 April, pp. 194-5 :*
Academy of Architecture, Moscow, by Shchusev. Illusd.

DOMESTIC (General)

ARCHITECTURAL RECORD, *1944 Dec., pp. 89-102 :*
Post-war house. Building types study 96, by W. F. Bogner, Associate Prof. Archre., Harvard. Pt. 1. Direction of progress ; largely study of economics and costs, neighbourhood plg., urban replg., etc. Pt. 2. House-bdg. technique ; prefab. equipment. Pt. 3. Design. Illusd.

ARCHITECTURAL FORUM, *1945 April, pp. 89— :*
"House omnibus." Special small house No. ; articles and reports by editors of American home and women's magazines reporting needs and taste of ordinary citizens, house planning, design, equipment, furniture, etc. Illusd.

ARCHITECT AND BG. NEWS, *1945 Jan. 12, pp. 36-38 ; Jan. 19, pp. 48-49 ;*
ARCHITECTS' JOURNAL, *Jan. 25, pp. 79-81 ;*
BUILDER, *Jan. 12, pp. 32-5 ;*
BUILDING, *Feb., pp. 50-54 ;*
COUNTRY LIFE, *Jan. 19, pp. 118-9 ;*
WOOD, *Feb., pp. 37-41 :*
Timber houses : winning designs in compn. promoted by Timber Development Association. J. P. Tingay [*A.*], winner. (Other designs in later issues.)

PLANNING (P.E.P. Broadsheet No. 231), *1945 Mar. 2 :*
Household appliances. Demand and supply, prices, design.

ARCHITECTURAL FORUM, *1945 Mar., pp. 143— :*
Domestic equipment. Review of post-war designs for heating, cooking, laundry, lighting, etc.

ARCHITECTURAL FORUM, *1945 Mar., pp. 8-9 :*
Dymaxion House by Buckminster Fuller. Discussion of use possibilities in U.S.

HOUSING

JNL., INSTN. MUNICIPAL AND COUNTY ENGINEERS, *1944 Jan. 2, pp. 174-83 :*
Post-war housing with . . . reference to the Housing Manual, 1944. Paper by G. N. Maynard, with discussion.

ARCHITECTS' JOURNAL, *1945 Jan. 18, pp. 154— :*
Developments in post-war housing in 1944. Article reviewing 1944 prefab., temporary, etc., designs. Bibliography of Govt. publns.

BUILDING, *1945 April, pp. 96-9 :*
Planning and heating the small house. Article by W. Segal. Illusd.

ARKITEKT (Istanbul), *1944 7-8, pp. 169-72 :*
Housing problems in Britain, by Elizabeth Denby.

ARCHITECT AND BUILDING NEWS, *1945 Jan. 12, pp. 28-33 ;*
ARCHITECTS' JOURNAL, *Jan. 11, pp. 36, xxxiv ;*
JNL., INCORPD. CLERKS OF WORKS' ASSN., *Feb. ;*
JNL. R.I.B.A., *Feb., pp. 91-5 ;*
NATIONAL BUILDER, *Jan. :*
An American looks at British housing. By Jacob Crane. Full report and discussion.

JNL., INSTITUTION OF MUNICIPAL AND COUNTY ENGINEERS, *1945 Feb. 6, pp. 197-201 :*
Estimation of housing needs and some economic considerations by A. J. Buttress, Engineer, Sunbury-on-Thames U.D.C. Family composition and house needs ; rating.

ARCHITECT AND BUILDING NEWS, *1945 Mar. 23, pp. 184-7 ;*
BUILDER, *Mar. 23, pp. 233-5 ;*
JNL. R.I.B.A., *April, pp. 167-70 :*
Housing production : Rept. of R.I.B.A. Ctte. Enquiry into availability of materials and labour, and organisation.

JNL., INSTN. MUNICIPAL AND COUNTY ENGINEERS, *1945 Mar. 6, pp. 251-5 :*
Notes on housing. Paper by F. A. B. Preston, chairman, Scottish Natl. Hg. and T.P. Council. General survey of housing problems in Scotland.

BUILDER, *1945 April 13, p. 293 :*
Small houses for Scotland. Design in comp. organised by Scottish Housing Advisory Ctte.

ARCHITECTURAL FORUM, *1945 May, pp. 134-40 ;*
ARCHITECTURAL REVIEW, *1945 Feb., pp. 39-48 ;*
ILLUSTRATED CARPENTER AND BUILDER, *April 13, pp. 395-404 :*
Steel houses at Northolt designed for British Iron and Steel Federation by F. Gibberd and D. H. Lee ; (A.R. :) plan, structure and equipt., fully described and illusd. (I.C. & B. :) Analysed in detail by R. V. Boughton.

COUNTRY LIFE, *1945 Mar. 2, pp. 374-5 :*
A plywood experimental house in course of erection nr. Southampton. Described by R. M. Lester.

ILLUSTRATED CARPENTER AND BUILDER, *1945 May 11, pp. 507-12 :*
Birmingham structurally convertible houses by City Engr.'s dept., for P.W. Ctte. of Birmingham. No. 8 in Modern Prefabn. series by R. V. Boughton.

ARCHITECT AND BUILDING NEWS, *1945 Mar. 9, p. 151 ;*
ARCHITECTS' JOURNAL, *Mar. 22, p. 222 ;*
BUILDER, *Mar. 9, p. 196 :*
Liverpool's narrow frontage bungalow for temporary use in high-density central areas. From the exhibition of temporary housing.

TEKNISK TIDSKRIFT (Stockholm), *1944 Jan. :*
The Swedish small house industry. Economic study by B. J. Zakrisson.

SOUTH AFRICAN ARCHITECTURAL RECORD, *1945 Jan., pp. 8-11 :*
Housing for the ex-service man. Article by A. T. Falconer, analysing S. African facts and figures of house production and rents.

ENGINEERING NEWS-RECORD (News Issue), *1945 Jan. 18, pp. 4-5 :*
Low-cost housing in Guatemala. 128 dwellings in terraces.

ARCHITECTURAL FORUM, *1944 Dec., pp. 109-16 :*
Carver Court, Coatesville, Pa. Small housing scheme by Howe, Stonorov & Kahn, for 100 negro war-workers' families. Scheme incls. day nursery.

S. AFRICAN ARCHITECTURAL RECORD, *1944 Nov., pp. 286-7 :*
Native housing. Experimental house by Dr. H. van der Bijl, Johannesburg. Illusd.

TASK (N. York), *No. 6, Winter 1944-5, pp. 4-7 :*
" Ghettoes, U.S.A." Article by Ann Copperman on reactionary U.S. housing policies segregating white and black. Contrasts Federal hsg. mixed estates.

ARCHITECTURAL FORUM, *1945 Jan., p. 8 :*
Temporary war houses. Proposal for peace-time disposal or use.

BUILDER, *1945 Jan. 26, pp. 77-8 :*
Temporary housing : conference at the Housing Centre.

BUILDER, *1945 May 4, p. 359 :*
Temporary housing programme. Statement by Capt. Maurice, Director of Tempy. Hg., on Government plans.

SCOPE, *1945 Feb., pp. 50-57, 83, &c., and subsequent issue :*
Engineering the house. Articles by R. Perry and R. Chapman on prefabrication.

BUILDER, *1945 April 6, p. 274 :*
Aluminium house. " Airoh " house by Aircraft Industries Research Organisation on Housing. Illus. of prototype.

TEKNISK TIDSKRIFT (Stockholm), *1944 Feb. 26, pp. 225— :*
Prefabd. house by Engineer Brosenius and Architect Bjerke. " System Bierke-Brosenius " for H.S.B. R.c. structure with permanent shuttering. Described and illusd.

ILLUSTRATED CARPENTER AND BUILDER, *1945 Mar. 30, pp. 339-46 :*
Braithwaite House, F. R. S. Yorke, archt., analysed by R. V. Boughton in Prefabn. series No. 4.

ARCHITECTURAL FORUM, *1945 Jan., p. 7 :*
Prefab. house developed by G. B. Brigham, Asst. Prof. Archl. Univ., Michigan. 5 rooms and bath ; in 7 units complete factory made.

ARCHITECTURAL DESIGN AND CONSTRUCTION, *1945 April, pp. 84-90 :*
" Bryant " house. Experimental houses for City of Birmingham. Constn. by C. Bryant & Son. Concrete slabs and poured concrete walls, light steel roof. Various plans.

ARCHITECTURAL FORUM, *1945 Jan., pp. 172, 74, 78, 82 :*
Prefabrication. General Houses, Inc., system of timber-framed houses.

ARCHITECT AND BUILDING NEWS, *1945 Mar. 16, pp. 170-4 ;*
ARCHITECTS' JOURNAL, *317-21 ;*
ARCHITECTURAL DESIGN AND CONSTRUCTION, *Mar., pp. 60-6 :*
BUILDER, *Mar. 16, pp. 210-2 ;*
HOUSING CENTRE BULLETIN, *No. 103, Mar., pp. 4-5 ;*
ILLUSD. CARPENTER AND BUILDER, *1945 April 27, pp. 451-6 :*
The Howard house. Prefab. house by F. Gibberd [*F.*], described and illusd. Light steel frame, clad with prefabd. asbestos panels, lined fibre board, aluminium foil insulation. 3-way adaptable plan. Erection takes a few days. (I.C.&B. :) Analysed by R. V. Boughton in Prefab. series No. 7.

ARCHITECTS' JOURNAL, *1945 May 3, pp. 335-9 :*
" Prebuilt " dry-construction " duplex " house, by I. Shamah. Light steel frame with variable cladding, incl. plastic.

ARCHITECTURAL DESIGN AND CONSTRUCTION, *1945 Feb., pp. 40-4 :*
" Smith's Building System." Method of rapid construction and job organisation as applied to housing. Prefabd. no-fines or cellular concrete walls, faced brick. Prefabd. plumbing unit. Illusd.

ARCHITECT AND BUILDING NEWS, *1945 Mar. 16, pp. 167-8 ; Mar. 30, pp. 206-7 ;*
ILLUSD. CARPENTER & BUILDER, *April 20 :*
Smith's building system (H. Howard Smith, inventor). Prefabricated brick. (A. & B.N., Mar. 30 :) " More about Smith's building system." Illlusd. With specimen house at Wednesbury. F. Styles, architect.

GUILD OF BUILDING REVIEW (Hull), *1944-5 No. 20, pp. 5-9 :*
" Spooner Dri-built " prefabd. Portal type house. Illusd.

ILLUSD. CARPENTER AND BUILDER, *1945 Mar. 9, pp. 255-60 :*
Tarran house. Detailed notes in Prefab. series by R. V. Boughton.

ARCHITECTS' JOURNAL, *1945 April 19, pp. 303-4 :*
" Tomo " temporary bungalow. Stressed skin of any available material on light timber frame. Archts., Yorke, Rosenberg & Mardall. Illusd.

ARCHITECT AND BUILDING NEWS, *1945 Mar. 30, p. 200 :*
" Unity house " prefabd. r.c. framed house, cladded " Cemstone " slabs. Archt., G. K. Finlay. Illusn. of ext.

JNL. R.I.B.A., *1945 Feb., p. 96 :*
Design for mass-produced poured-concrete dwellings invented by Edison, 1907. Reprint from *Daily Mail*, 11.12.07, illusd.

JNL., ROYAL ARCHITECTURAL INSTITUTE OF CANADA, *1945 Mar., pp. 56-62 :*
Prefabricated house industry in Canada, England, U.S. Survey by E. G. Faludi and Catherine Chard.

ARKHITEKTURA S.S.S.R. (Moscow), *1944 No. 7, pp. 3-8 :*
Factory house production. Detailed article by G. F. Kuznetsov on Soviet prefab. experience and technique of factory organisation.

ARKHITEKTURA S.S.S.R. (Moscow), *1944 No. 7, pp. 9-11, 12-19 :*
Prefabricated houses. Plan types and elevational treatments. Illusd.

ARKHITEKTURA S.S.S.R. (Moscow), *1944 No. 8, pp. 12-19 :*
The architecture of prefabricated houses. Article illustrating and describing many house types and designs.

ARCHITECTURAL FORUM, *1945 Feb., pp. 172 et seq. :*
Russian prefabd. housing. Note on designs and methods, illusd.

ARCHITECTURAL FORUM, *1945 Feb., pp. 110-12 :*
" Your post-war home." Reprint of article from YANK, U.S. Service magazine, on standard prefabd. houses for ex-Service men.

ARCHITECT AND BUILDING NEWS, *1945 May 4, pp. 72-4 ;*
ARCHITECTS' JOURNAL, *1945 May 10, pp. 353-6 ;*
ARCHITECTURAL DESIGN & CONSTN., *June, 143-4 ;*
BUILDER, *May 4, pp. 352-4 ;*
WOOD, *June, 147-8 :*
American temporary house for Britain. Model erected. Light timber-framed clad Homasote. Illusd.

BUILDER, *1945 Feb. 23, pp. 152-4 :*
Prefabricated houses. Designs from exhibition at R.I.B.A. Steel prefab. under Office Technique d'Utilisation d'Acier.

ARCHITECTURAL FORUM, *1945 Mar., pp. 190, —5, 200 :*
Prefabd. minimum timber house designed and model erected by Texas students ; function and cost analyses. Illusd.

ARCHITECTURAL RECORD, *1945 Mar., pp. 80-2 :*
Plywood houses : winning designs in U.S. Plywood Corpn. comp.

BUILDER, *1945 Mar. 23, p. 239 :*
Prefabricated houses and bug nuisance. Rept. of meeting at Royal Soc. Tropical Medicine.

ARCHITECT & BG. NEWS, *1945 Feb. 2, p. 84 ;*
ARCHTL. DESIGN & CONSTRUCTION, *Mar., p. 70 :*
BUILDER, *Jan. 19, p. 52 :*
British Cast Concrete Federation temporary house. Illusd. and described.

JNL., AMERICAN INST. ARCHITECTS, *1944 Dec., pp. 259-64 :*
The architect and public housing. Article by C. D. Loomis, Tech. Director Housing, Baltimore.

ARCHITECT AND BUILDING NEWS, *1945 May 11, pp. 86-8 :*
Agricultural workers' cottages, Woolfardisworthy, Bideford, by Orphoot, Whiting & Lindsay. Brick cavity wall, lime-washed.

ARCHITECTS' JOURNAL, *1945 Mar. 29, pp. 247— :*
Farm-workers' cottages, W. Penwith, Cornwall, by G. Bazeley.

ARCHITECT AND BUILDING NEWS, *1945 Jan. 19, pp. 45-7 :*
ARCHL. DESIGN & CONSTRUCTION, *Apl., 93-4 ;*
BUILDER, *Jan. 12, pp. 30-1 ; Jan. 19, pp. 50-1 :*
Cottages. Winning designs in competitions promoted by Dartington Hall. G. Grenfell Baines Archl. Group, winner.

FLATS

BUILDER, *1945 Feb. 16, p. 134 :*
Flats scheme, Devons Road, Poplar, by L.C.C. Five- and eight-storey flats with lifts ; acc. for 1,360.

BYGGMÄSTAREN (Stockholm), *1944 No. 25, pp. 463-71 :*
"Collective" blocks of flats, Marieburg, by S. I. Lind. Two blocks, 8 storeys, 2-4 room flats, with restaurant, day nursery, etc. Illusd.

SOUTH AFRICAN ARCHITECTURAL RECORD, *1944 Nov., pp. 279-83 :*
Marchie Mansions, Pretoria. Group 2 of 2-3-room middle-class flats in 16-flat block, with large penthouse flat addition to existing scheme by A. V. Nunn [*A.*].

ARCHITECTURAL FORUM, *1945 Jan., pp. 81-5 :*
Terrace of three-storied apartments by G. Nemeny, N. York. Various compact modern plans.

IRISH BUILDER AND ENGINEER, *1945 Feb. 24, pp. 83-6 :*
Reconditioning of tenement houses : Dublin corporation's war-time experiment.

CLUBS

BUILDER, *1945 Mar. 9. pp. 187-94 :*
Buildings for boys' clubs : some notes on planning, by A. Llewellyn Smith and A. B. Waters, consulting archts., Nat. Assn. Boys' Clubs. Illusd.

BUILDER, *1945 Jan. 26, pp. 70-3 :*
Bradv Boys' Club, Whitechapel (for 200 boys), by Messrs. Joseph [*FF.*]. Illusd.

HOTELS

ARCHITECTURE ILLUSTRATED, *1945 Feb., p. 20 :*
"Roval" Hotel, Luton, by R. G. Muir.

ARCHITECTURAL REVIEW, *1945 Mar., pp. 83-8 :*
Industrial hostels. Article by Howard Robertson on hostels for M.O.W., M.A.P., M.O.S., based on standard design by Robertson.

FARM BUILDINGS, &c.

ARCHITECTS' JOURNAL, *1945 May 10, p. 348 :*
Soviet village buildings. Illusns. from exhibn. in Moscow.

IRISH BUILDER AND ENGINEER, *1944 Sept. 9, pp. 359-60 :*
Modern farm buildings : some considerations of design. Illusd.

ARCHITECTURE CHRONICLE (Moscow), *1944 Nov., pp. 1-5 :*
Archre. and reconstruction in collective farms. Article by N. Colley.

JNL., INSTITUTION OF ELECTRICAL ENGINEERS, *1945 April. pp. 172-4 :*
Electrical aspects of farm mechanisation. Abstract of paper by C. A. C. Brown. Lay-out of equipment and for all-elect. cow-shed and milk house. Illusd.

HOLIDAY HOUSES

COUNTRY LIFE, *1945 April 13, pp. 640-1 :*
Shooting box, Gawdy Hall, Norfolk. Part-prefabd. by Boulton & Paul.

PENCIL POINTS, *1944 Dec., pp. 68-73 :*
Holiday house by sea, Gearhart, Oregon, by P. Belluschi. Modern timber design.

COUNTRY AND SMALL HOUSES

ARCHITECTURAL RECORD, *1945 Jan., pp. 84-7 :*
"Ship-shape" house designed for naval architect equipped on yacht lines.

ARCHITECTURAL RECORD, *1944 Nov., pp. 74-9 :*
House design for the mass market. Traditional design small houses for speculative bdg. Plan variants.

HOUSE BUILDER AND ESTATE DEVELOPER, *1945 April, pp. 150-5 :*
Model specification for small house by Natl. House-builders' Registration Council. First instalment.

ARCHITECTURAL RECORD, *1944 Dec., pp. 68-73 :*
Houses. Middle-class houses : projects by Thirty, Gropius (Panel Corpn. prefab.), Keck and A. T. Brown.

ARCHITECTURAL FORUM, *1944 Dec., pp. 129-40 :*
Small U.S. middle-class houses, incl. work by Wurster, Raymond, Peterson.

DOMESTIC DEPENDENCIES (of buildings generally)

HEM I SVERIGE (Stockholm), *1944 No. 6, pp. 769-71 :*
Music rooms. Article by H. Glimstedt. Illusd.

BUILDER, *1945 Feb. 9, pp. 112-4 :*
Canteen for aircraft factory by H. V. Lobb. Seats 1,660.

ARCHITECTS' JOURNAL, *1945 Jan. 11, pp. 25-36 :*
"The hub of the house." 2nd report by the Assn. for Planning and Regional Reconstruction on bathrooms and w.c.s, household cleaning, refuse storage and removal, home laundry work.

JNL., INSTN. OF MUNICIPAL AND COUNTY ENGINEERS, *1945 Jan. 2, pp. 184-8 :*
"One idea on post-war kitchen planning," by B. J. Cornelius, F.S.I. Plan for kitchen in small house, with discussion, inc. public opinion survey in W. Riding.

ARCHITECTURAL DESIGN AND CONSTRUCTION, *1945 Feb., pp. 28-36 ;*
NATIONAL BUILDER, *Mar., pp. 179-83 :*
Kitchens. Notes and articles on Arcon demonstration k. for Radiation, British Elect. Development Assn. kitchens, etc.

BUILDER, *1945 Feb. 2, pp. 87— :*
"Hopes and fears for the kitchen : a straight talk to architects."

KEYSTONE, *1945 April, p. 10 :*
Kitchens. Note on design and fittings by E. Goldfinger.

ARCHITECTS' JOURNAL, *1945 Mar. 29, pp. 245-6 :*
Planned electric kitchen. Design by E. R. Gilbert.

MODERN HOSPITAL (Chicago), *1944 Dec., pp. 100-4 :*
Hospital kitchen, Lutheran Hospl., Cleveland, remodelled.

ARCHITECTURAL FORUM, *1944 Dec., p. 123 :*
Bathroom. Design for "3-passenger bath," *i.e.* bathroom lay-out for luxury private house; includes bath, wash-basin and w.c. in separate compartments. Equipment details.

ARCHITECTURAL FORUM, *1945 Feb., pp. 97-100 :*
Wash-basin and toilet cupboard fitted in corner of bedroom.

ARCHITECTURAL FORUM, *1945 Jan., pp. 119-23 :*
Garage and storage shed for private houses by J. Funk.

ARCHITECTURAL RECORD, *1944 Dec., pp. 103-4 :*
Household closets, pt. 4. Specialised cupboard design. Time-saver standards.

DETAILS, CRAFTS, FITTINGS

PENCIL POINTS, *1945 Feb., p. 54 :*
Sliding partition in private house. Detail by V. E. Bailey.

PENCIL POINTS, *1945 Feb., p. 83 :*
Window-box for growing flowers in house, by G. Daub. Detail.

ARCHITECTS' JOURNAL, *1945 Feb. 22, pp. 151-6 :*
Balconies in Stockholm flats. Photos by G. E. Kidder-Smith.

COUNTRY LIFE, *1945 April 13, pp. 642-5 :*
Mural painting in England since the Renaissance, by Ralph Edwards. Historical survey from Elizabeth's reign to to-day. Illusd.

ILLUSD. CARPENTER AND BUILDER, *1945 Jan. 19 :*
"True fresco." Article by Ithell Colquhoun.

BUILDING, *1945 April, pp. 106-10 :*
Wallpapers : an analysis of the place and purpose of wallpapers in modern archre.

BUILDER, *1945 April 27, pp. 330-2 :*
Temporary altar, St. Paul's Cathedral nave (after dome damage), by W. Godfrey Allen, Surveyor to the Fabric. Also ancient Table now in crypt.

ARCHITECTURE (General), including EDUCATION

ARCHITECTURE CHRONICLE (Moscow), *1944 June-July (No. 6), pp. 6-13 :*
U.S.S.R. Academy of Architecture. Report of 6th session. Summary of past work by V. Vesnin, President. Scientific tasks, rept. by K. Alabian.

ARCHITECTURE CHRONICLE (Moscow), *No. 8, 1944 Aug., pp. 7-11 :*
Problems of archl. education. Paper by Academician Zholtovsky.

SOUTH AFRICAN ARCHITECTURAL RECORD, *1944 Dec., pp. 292-9 :*
Architectural education. Rept. of symposium held by Archl. Students' Socy. Univ., Witwatersrand.

ARCHITECTURE CHRONICLE (Moscow), *1944 Sept., pp. 8-11 :*
Architectural education. Rept. of discussion on courses and work of Moscow Archl. Inste.

THEORY, COLOUR

BURLINGTON MAGAZINE, *1945 Mar., pp. 73-6 :*
Gothic canons of architecture. Article by Matila Ghyka. Benedictine Order and evolution and transmission of design canons ; " dynamic symmetry " ; the " golden section," etc.

JNL., ROYAL SOCIETY OF ARTS, *1945 May 11, pp. 304-12 :*
Colour as a factor in industrial design, by R. F. Wilson, Art Director, British Colour Council. Incls. colour in housing, factories and offices.

ARCHITECTURAL REVIEW, *1945 May, pp. 130, 149-50 :*
Colour in the picturesque village. Article and illusns. by John Piper.

PRESERVATION

COUNTRY LIFE, *1945 Jan. 12, pp. 62-4 :*
Fifty years of the National Trust. Illusd. article by G. M. Trevelyan, O.M.

COUNTRY LIFE, *1945 April 6, pp. 592-3 :*
Regency terraces at Hove, Sussex. Article by Dorothy Stroud, prompted by danger of demolition. Illusd.

ARCHITECT AND BUILDING NEWS, *1945 April 27, pp. 51-8 :*
Bath and its terraces : note by H. B. Creswell on proposal for conversion by Soc. Protection of Ancient Bdgs. and Bath Preservation Trust. Illusd.

BUILDER, *1945 Mar. 16, pp. 208— :*
Restoration of a regency terrace of small houses, Stratford-on-Avon, by F. W. B. Yorke.

ARKHITEKTURA S.S.S.R. (Moscow), *1944 No. 7, pp. 1-2 :*
Architecture and the restoration of buildings : rept. of a session of the Academy of Archre.

TASK (N. York), *No. 6, Winter 1944-5, pp. 30— :*
" Colonial Williamsburg." General article on restoration.

HISTORY

ARCHITECT AND BUILDING NEWS, *1945 May 4, pp. 76-8 ;*
ARCHITECTURAL ASSOCIATION JOURNAL, *May ;*
BUILDER, *May 4, p. 355 :*
" Architecture on the doorstep " : i.e. within ¼ m. rad. of Bedford Sq. [Bloomsbury]. Lecture to A.A. by John Summerson. Witty critical survey.

JNL., AMERICAN INST. ARCHITECTS, *1944 Dec., pp. 281-9 :*
South American heritage. Article by Dean Arnaud, of Columbia Univ. Illusd.

REVISTA DE ARQUITECTURA (Buenos Aires), *1944 Nov., pp. 501-10 :*
The general character of the architecture of the Incas, by Oscar L. de Guevara, of Cuzco, Peru. Article with many good illusns.

COUNTRY LIFE, *1945 Mar. 30, pp. 556-7 :*
Henry Keene : a Georgian architect (1726-76). Article by H. Clifford Smith. Archt. of High Wycombe Guildhall ; Hartwell Ch., Bucks.

BURLINGTON MAGAZINE, *1945 Jan., pp. 4-17 :*
Polish renaissance architecture by K. Estreicher and Renaissance sculpture in Poland by J. Zarnecki. Illusd.

ARCHITECTURE CHRONICLE (Moscow), *1944 Oct., pp. 17-18 :*
Quarenghi, 1744-1944. Moscow celebrations of bi-centenary.

ARCHITECTURAL REVIEW, *1945 May, pp. 131-4 :*
" A German architect's visit to England in 1826." Article by L. Ettlinger on Schinkel's visit in 1823.

ARCHITECTURAL REVIEW, *1945 Mar., pp. 75-82 :*
Cairo baroque. Article by John Fleming. 19th-century archre. and decoration.

BUILDER, *1945 April 13, p. 288 :*
Maxwell Fry on Modern architecture. Questions and answers at an A.A. students' meeting.

ARCHITECT AND BUILDING NEWS, *1945 Jan. 15, pp. 21-33 :*
London street architecture, 1922-37. Panorama of R.I.B.A. Bronze Medal winners.

BUILDING, *1945 Mar., pp. 68-74 :*
J. D. M. Harvey in Architect-artists series.

ARCHITECT AND BUILDING NEWS, *1945 Feb. 16, pp. 107-113 ;*
BUILDER, *Feb. 16, pp. 127-31 ;*
JNL., ROYAL INSTITUTE OF BRITISH ARCHITECTS, *Mar. :*
The work of the late Sir Edwin Lutyens, O.M. Memorial paper to R.I.B.A. by H. S. Goodhart-Rendel. Illusd.

BUILDING, *1945 Feb., pp. 44-6 :*
Rodney Thomas, in architect-draughtsmen series.

TASK (N. York), *No. 6, Winter 1944-5, pp. 37-45 :*
Soviet architecture to-day. Reprint of article by Edward Carter from ARCHITECTURAL REVIEW, Nov. 1942. Illusd.

ARCHITECTURE CHRONICLE (Moscow), *1944 June-July (No. 6-7), pp. 15-16 :*
Rudnev : Soviet architect academician. Biog. note.

SCHWEIZERISCHE BAUZEITUNG (Zürich), *1940 June 8, pp. 259-63 :*
Finnish architecture : general illusd. review.

JNL., ROYAL ARCHITECTURAL INSTITUTE OF CANADA, *1944 Dec., pp. 269-84 :*
Eliel Saarinen. Appreciation by Kent Barker. Illusd. by Cranbrook Academy of Art, Crow Island School, Ill. Project for Smithsonian Gallery of Art, Washington (with Eero Saarinen). Kleinhans Music Hall, Buffalo. Tabernacle Church of Christ, Columbus, Indiana.

BYGGMÄSTAREN (Stockholm), *1945 No. 4, pp. 57-9 :*
Ragnar Ostberg, 1866-1945. Memoir by Hakon Ahlberg.

STUDIO, *1945 April, pp. 126-31 :*
Architecture in Canada. Article by Humphrey Carver. Illusd.

JOURNAL R.I.B.A., *1945 Mar., p. 121 ; Apl., p. 166 :*
Woronzov Palace, Yalta, Crimea (house of British Delegation, Yalta Conference), built by Edward Blore, 1850. Illusns.

WOOD, *1945 Mar., pp. 55-8 :*
The construction of English windmills. Article by A. Leathart. Illusd. by Limpsfield Chart Mill and others.

CUADERNOS DE ARQUITECTURA (Barcelona), *1944 Nov., pp. 5-19 :*
Mediæval baths in Spain. Article by César Martinell. Gerona, Barcelona, Valencia, Palma de Mallorca.

ARCHITECTURAL REVIEW, *1945 May, pp. 139-48 :*
Synagogues of Eastern Poland. Article by G. Loukomski on 17th and 18th cent. wooden and stone synagogues. Illusd. Bibliog.

COUNTRY LIFE, *1945 May 11, pp. 816-9 :*
Cawdor Castle, Nairne, described by Oliver Hill. Illusd.

COUNTRY LIFE, *1944 Jan. 26, pp. 153— :*
The Twilight of the great house. Note on paintings by John Piper of English country houses. Illusd.

COUNTRY LIFE, *1945 Mar. 16, pp. 468-9 :*
Wood-carved pews, Altarnun Church, Cornwall.

DRAWING, &c.

JNL. R.I.B.A., *1945 Feb., pp. 117, Apl., and subseq. issues :*
Architects' scales. Corr. started G. R. Dawbarn on use of " natural " decimal scales.

BUILDING, *1945 Jan., pp. 14-5 :*
Architectural model-making. Short article, illusd.

COUNTRY LIFE, *1945 Mar. 30, pp. 550-1 :*
Pictorial notepaper. Article by C. H. (Chr. Hussey) on 19th-century paper with, usually, topographical vignette headpieces.

BUILDER, *1945 April 6, pp. 267-8 :*
JNL., ROYAL SOCIETY OF ARTS, *1945 Mar. 30, pp. 214-22 :*
Beauty in signs and civic lettering. Paper by P. D. Smith, R.D.I.

ARCHITECTURAL VOCATION, PROFESSIONAL PRACTICE

BYGGMÄSTAREN (Stockholm), *1944 No. 25, pp. 473-8 :*
The architect—professional man or civil servant. Article by Hakon Ahlberg.

CONCRETE AND CONSTRUCTIONAL ENGINEERING, *1945 Mar., pp. 35-6 :*
Architect and engineer : editorial on T. P. Bennett paper to R.I.B.A.

JNL., ROYAL ARCHITECTURAL INSTITUTE OF CANADA, *1945 Jan., pp. 3-7 :*
Effective teamwork (between architect, engineer and contractor) in bdg. design. Articles by T. H. Creighton and F. N. Severud. Latter article largely concerned with Bellevue Hospl., N. York, Nurses' Home. Illusd.

BUILDER, *1945 April 13, pp. 294-8 ;*
JOURNAL R.I.B.A., *May :*
Codes of practice in building. Paper to R.I.B.A. by C. Roland Woods on work of Codes of Practice Committees of Min. of Works.

ARCHITECT AND BUILDING NEWS, *1945 Feb. 9, pp. 100-2 ;*
JNL., ROYAL SOCIETY OF ARTS, *1945 Mar. 30, pp. 205-14 ;*
PARTHENON, *Mar., pp. 90-4 :*
National building regulations : paper by G. P. Clingan, City Building Surveyor, Liverpool, to R. Soc. Arts.

ENGINEERING NEWS-RECORD, *1945 April 5, pp. 160-9 :*
Time and methods study speeds construction. Article by H. George, genl. cost engr., T.V.A. Methods by which constn. time has been saved in T.V.A. heavy constructions. Illusd.

BUILDER, *1945 Jan. 26, pp. 73-4 :*
Tendering for housing contracts. Article by S. Hookway.

JNL., INSTN. OF MUNICIPAL AND COUNTY ENGINEERS, *1945 Mar. 6, pp. 229-39 :*
Some points on building contracts. Paper by B. C. Britton.

BUILDER, *1945 Mar. 30, pp. 257-60 :*
Placing and management of building contracts. Rept. of discussion at C.S.I. opened by C. T. Every.

ARCHITECT AND BUILDING NEWS, *1945 Jan. 12, 8p. 24-8 :*
Building approvals and consents : by a barrister-at-law.

(To be continued)

Notes

Royal Gold Medal

The President has received the following letter from Academician Victor Vesnin :—

Moscow, 22 April 1945.

Dear Mr. Thomas,—I am much honoured to receive notice of the award to me of the Royal Gold Medal 1945 for Architecture.

May I ask you to accept and convey to the Council of the R.I.B.A. my appreciation of the great honour thus accorded me. It affords me particular pleasure to find my name included in the glorious roll of Medallists now, at a time when the people of my country and Great Britain are waging a heroic struggle shoulder to shoulder against a common enemy. In this struggle difficult and honourable responsibilities have been laid upon the shoulders of architects. We have to give new houses to millions of people who have been deprived of hearth and home by barbaric Hitlerism. We have to build new towns, create new forms of contemporary architecture which will satisfy the great demands of the age.

In this vast and complex task collaboration between the architects of the U.S.S.R. and Great Britain acquires particular significance. I am convinced that this collaboration will bear fruit in the near future, and I regard the great honour accorded me by the R.I.B.A. as a symbol of collaboration between our two countries.

May I then take advantage of this occasion to transmit to all members of the R.I.B.A. and all British architects heartfelt and friendly wishes for the success of their great creative work.

With very best wishes, my dear President,

Sincerely yours,

(Signed) Victor Vesnin.

Birthday Honours

The following honours to members are included in the Birthday Honours List :—

K.C.V.O. : Sir Eric MacLagan, C.B.E., F.S.A. (*Hon. A.*)

O.B.E. (Civil) : Capt. J. W. Binge, M.C. [*A.*] ; Alderman T. Jenkins [*F.*] ; Mr. C. Kennard, F.S.I. [*F.*] ; Mr. R. Medcalf [*F.*]

O.B.E. (Mil.) : Lieut.-Colonel E. D. J. Mathews, R.E. [*A.*]

M.B.E. (Mil.) : Major G. C. Fardell, R.E. [*A.*] ; Major P. H. Knighton, R.E. [*A.*] ; Major J. H. Sturgeon, R.E. [*A.*]

M.B.E. (Civil) : Mr. Frederick Barber [*F.*] ; Mr. William Theodore Jackson [*A.*] ; Mr. Wallace George Lofthouse [*A.*] ; Mr. H. C. H. Monson [*F.*]

C.B.E. (Mil.) : Brigadier A. R. B. Cox (Member of Western Australian Chapter, R.A.I.A.).

The following awards were made to men closely associated with architectural affairs :—

Knighthood : Mr. Henry T. Holloway, Member of the Joint Contracts Tribunal.

C.B. : Mr. I. F. Armer, M.C., Principal Assistant Secretary, Ministry of Health.

C.B.E. : Mr. D. M. Matheson, Secretary, the National Trust.

O.B.E. : Mr. A. H. Adamson, Member of the Joint Contracts Tribunal.

R.I.B.A. Special Final Examination

The revised syllabus for the Special Final Examination comes into operation on 1 January 1946. From that date the Examination will be identical with the Final Examination with the exception of the Thesis, although the regulations and procedure in connection with the application for admission to the examination remain the same.

Attention is drawn to the fact that the new syllabus differs from the present one particularly in Subject B (Construction) and instead of a combined paper of three and a half hours in General Construction and Theory of Structures, two separate papers will be set in these subjects of three and a half hours and three hours respectively.

Candidates who have been previously relegated in Subject B of the present syllabus are asked specially to note that if they fail to qualify in this subject under the present syllabus by the end of 1945, they will be required to take the two separate papers referred to above should they present themselves at any later examination.

Board of Architectural Education

With the termination of hostilities in Europe, the Board of Architectural Education are arranging to resume all their normal activities.

During the war periodical meetings of the Board of Architectural Education have been held, but the main business of the Board has been transacted by the officers of the Board. The three main committees of the Board—the Schools Committee, the Examinations Committee and the Prizes and Scholarships Committee will shortly resume their normal functions. The R.I.B.A. Visiting Board expect to resume their visits to Schools of Architecture next session.

The competitions for the R.I.B.A. Prizes and Studentships will be re-instituted for the year 1946, the competitions being held on the usual lines during 1946, and the announcement of the Council's Deed of Award, followed by the Criticism of the Prizes, taking place in January, 1947. The Board are examining the values of the various prizes from the point of view of the increased cost of living and any accumulation of prize monies that may have taken place, and the conditions governing the competitions from the point of view of relaxations which might be made for those who have been affected by the war.

A.B.S. Annual Meeting

The annual general meeting of the Architects' Benevolent Society took place on 2 May 1945, when Mr. Percy E. Thomas was re-elected President of the Society.

Mr. Thomas said that the Society was going steadily ahead, both in the work done and in the support received, but he would like to see the funds increased so that it need not be restricted in the work it tried to do for those in need.

They were greatly handicapped by the paper shortage, in their efforts to make the Society known. This was a method by which members could help by acting as agents for the Society and ersuading their friends to join. A small leaflet describing the Society's work could be obtained from the office and members would send these to their friends who did not as yet subscribe.

He also urged members to take advantage of the Seven-Year Covenant Scheme by which a subscriber could double the amount received by the Society without extra cost to himself.

The Society would have to deal with many post-war difficulties of re-adjustment, as well as the ordinary applications from the aged, the sick, and orphans, and Mr. Thomas asked all architects to give their full support to their Benevolent Society so that adequate help need never be refused to those in want.

Captain H. S. Goodhart-Rendel [*F.*] was elected hon. treasurer and Sir Charles A. Nicholson, Bart. [*F.*] hon. secretary.

The District Surveyors' Association

The London District Surveyors' Association, which includes in its ranks a number of members of the R.I.B.A., and which for the past eighty years has held its meetings at the Institute's premises, has this year attained its centenary. To celebrate this event the Association, on 31 May, gave a luncheon at the Vintners Hall, E.C.4, which was attended by the Presidents of various professional societies, other leading members of the architectural, surveying and structural engineering professions, the Chairman of the War Damage Commission, and also important persons concerned with public administration, including the following members of H.M. Government : Mr. H. U. Willink, Minister of Health ; Mr. W. S. Morrison, Minister of Town and Country Planning ; Mr. Duncan Sandys, Minister of Works. Mr. Herbert Morrison, late Home Secretary, and in pre-war years Leader of the London County Council, was also among the guests. Lord Latham, the present Leader of the Council, in proposing the toast of the District Surveyors' Association, spoke appreciatively of the work of the District Surveyors as executive officers in charge of the Rescue Service in the County of London during the war.

NOTES FROM THE MINUTES OF THE COUNCIL

19 JUNE 1945

School Design and Construction

The report of the "ad hoc" Committee which was appointed in February 1945 was approved by the Council and will be published and sent to the Government departments concerned and other interested bodies.

Scale of Annual Salaries for Architects

The Council approved a revised Scale of Annual Salaries which supersedes the previous Scale which was issued in June 1937. Copies of the new Scale are available to members on application.

Scale of Architects' Fees for State-aided Housing Schemes

The Council approved a revision to Clause C, House Design, which makes provision for the payment of fees for partial service, *e.g.*, where the architect is not required to carry out supervision of the work of local authorities who may desire their own officials to do the supervision.

Report of the Library Reconstruction Committee

The Council approved subject to the concurrence of the Finance and House Committee a report of the Library Reconstruction Committee dealing with the organisation and working of the Library and proposing certain improvements and reorganisation.

Prizes and Studentships

The Council approved the recommendation of the Board of Architectural Education that the competitions for the R.I.B.A. Prizes and Studentships be re-instituted for the year 1946. The competitions will be held on the usual lines during 1946 and the announcement of the Council's Deed of Award followed by the Criticism of the Prizes will take place in January 1947.

The Prentice Bequest

On the recommendation of the Board of Architectural Education the Council have approved the conditions of the proposed Scholarship for the study of Spanish Architecture provided under the Prentice Bequest. The general object of the scholarship is to promote research and study with a view to a wider knowledge and understanding in Great Britain of the contribution of Spain to the art of architecture.

The Maintenance of Adequate Standards in British Standard Specifications

On the recommendation of the Architectural Science Board the B.S.I. are being asked to issue an instruction to all B.S.I. Committees urging that an adequate standard must be maintained in all British Standard Specifications and that this standard is to be estimated without regard to the exceptional conditions that may prevail in the immediate post-war period. If circumstances in the immediate post-war period forbid the fulfilment of various British Standard Specifications in all respects the necessary adjustments can be made by a revision or exclusion of the offending clauses when referring to the British Standard Specifications.

Planning Procedure

On the recommendation of the Town and Country Planning Committee the Council decided to write to the Permanent Secretary to the Ministry of Town and Country Planning asking for information as to the administrative procedure being adopted by the Ministry.

Housing Work and the Employment of Architects

On the recommendation of the Town and Country Planning Committee the Council decided to write to the Minister of Health suggesting that in the interests of good design and appearance as well as sound planning and construction the granting of loans or subsidies to local authorities for housing should be conditional upon their employing or engaging architects for their permanent housing work.

Height of Rooms

Following a report from the Housing Committee the Council decided to ask the Minister of Health if he would give favourable consideration to the relaxation by local authorities of their Bye-laws to allow the height of rooms to be 7 ft. 6 in. where deemed appropriate.

Rules of the Northamptonshire, Bedfordshire and Huntingdonshire Association of Architects

The Council approved alterations to the rules of the Northamptonshire, Bedfordshire and Huntingdonshire Association of Architects.

Birthday Honours List

The Council's congratulations have been conveyed to members and certain others who were included in the Birthday Honours list.

Appointments

R.I.B.A. Representative on the Court of Governors of the University of Sheffield :
Mr. H. B. S. Gibbs [*F.*]

R.I.B.A. Representative on the Faculty of Architecture of the University of Wales :
Mr. C. F. Bates [*F.*]

R.I.B.A. Representative on the Court of the University of Liverpool :
Mr. H. J. Rowse [*F.*]

Obituary

The Secretary reported with regret the death of the following members and Students :—

George Anag [*F.*]
Patrick Joseph Hill [*F.*]
Arthur Southcombe Parker [*F.*]
Tom Norman Dinwiddy [*Retd. F.*]
John Keppie, R.S.A. [*Retd. F.*]

Mr. Keppie was a Vice-President in 1929-30, a past President of the Royal Incorporation of Architects in Scotland, and a past member of the Allied Societies' Conference.

Colin Campbell Fraser, M.C. [*A.*]. Killed on Active Service.
Henry Jenner Griggs [*A.*]
William Charles Maxwell [*A.*]
John Edward Potter [*A.*] Killed on Active Service.
Mary Noel Robinson [*A.*]
Fred Moxon Wilding [*L.*]
David Cyril Williams [*L.*]
John Philip Archer [*Student*]. Killed on Active Service.
Ronald Hume [*Student*]. Killed on Active Service.

Membership

The following members were elected :—

As Fellows : 5. As Associates : 37. As Licentiates : 15.

Election October 1945

Applications for election were approved as follows :—

As Fellows : 21. As Associates : 9. As Licentiates : 22.

Reinstatements

The following ex-members were reinstated :—

As Associates : Roderick Nelson Guy, Cecil Thomas Sherwin.
As Licentiates : Walter William Ball, Harold Vint Dyson, George Melville McCorquodale, Edward Procter.

Resignations

The following resignations were accepted with regret :—

Thomas Denton Brooks [*A.*], Cedric Paul Thesiger [*A.*], Alfred William Hoare [*L.*], George Raymond Morgan [*L.*], Richard Arthur Waite [*L.*].

Applications for Transfer to the Retired Members' Class under Bye-law 15

The following applications were approved :—

As Retired Associate : Edwin James Dod.
As Retired Licentiate : Thomas Percy Bell.

Membership Lists

ELECTION NOVEMBER 1945

An election of candidates for membership will take place in November 1945. The names and addresses of the overseas candidates, with the names of their proposers, are herewith published for the information of members. Notice of any objection or any other communication respecting them must be sent to the Secretary, R.I.B.A., not later than Saturday, 27 October 1945.

AS FELLOW (1)

NEWHAM : WILLIAM BENJAMIN TURNER [*A.* 1923], P.W.D., Pretoria, South Africa : 1 Rissik Drive, Waterkloof, Pretoria. V. S. Rees-Poole, S. C. Dowsett and G. E. Fitzgerald.

AS ASSOCIATE (1)

COOK : VINCENT NEALE (Passed a qualifying Exam. approved by the I.S.A.A.), 34, First Avenue West, Parktown North, Johannesburg. A. S. Furner, Robert Howden and Gordon Leith.

ELECTION : 19 JUNE 1945

The following candidates for membership were elected on 19 June 1945 :—

AS FELLOWS (5)

BLACKETT : JOHNSON [*A.* 1921], Newport.
POULTON : DENIS, Dip.Arch. (Liverpool) [*A.* 1929].
POWELL : LESLIE CHARLES [*A.* 1931].
PRICE : WILLIAM HAROLD [*A.* 1920], Bristol.

And the following Licentiate who has passed the qualifying Examination :—

BURD : THOMAS.

AS ASSOCIATES (37)

ASTINS : NORMAN PERCY, Bath.
BALDWINSON : ARTHUR NORMAN, Victoria, Australia.

BLAND : KENNETH WILLIAM.
BRANGROVE : CHARLES ALFRED.
BRANSON : NORMAN RICHARD, Brewood, Staffs.
CARLIN : WILLIAM PATRICK, Dublin.
CARTER : WILLIAM MATHIAS.
CHRISTY : ROY THOMPSON, B.Arch. (Liverpool).
CROW : HAROLD VICTOR.
DIXON : MISS BERYL MAY, Brooklands, Cheshire.
EASTAUGH : DONALD HUGH.
ELLIOTT : MISS THELMA HERMIONE, Rotherham.
GARLICK : ALFRED.
GODFREY : JAMES ARTHUR.
GOTELEE : FREDERICK ALAN, Chepstow, Mon.
HARE : ALBERT FREDERICK.
HIGGIN : JOHN, Dip.Arch. (Liverpool), Preston.
JONES : THOMAS MALDWYN, Bury.
KELSEY : NORMAN GEORGE, Southsea.
KING : ERNEST PLATTON.
LACEY : WILLIAM DANIEL.
LEE : WILLIAM LAMBERT, Melbourne, Australia.
MACKENNA : PERCIVAL CHARLES, B.Arch., Dublin.
MCKNIGHT : GORDON KEMPSON, Belfast.
MCROBIE : ALEXANDER, Aberdeen.
MOORE : ERNEST ROY, Stockport.
NIGHTINGALE : GEORGE WILLIAM, Sutton Coldfield.
PEARSON : MRS. HELEN SOPHRONIA, B.A. (Arch.) Lond.
SMYTH : ROY JOHN.
STEVENS : GEORGE EDGAR, Birmingham.
TALBOT : EDWIN WILLIAM.
THOMPSON : ADDISON ROY, Sheffield.
WILKINSON : JOHN GEORGE, B.Arch. (Liverpool), A.M.T.P.I., Bath.
WILLIAMS : THOMAS DENBY, Bradford.
WILSON : IAN BURNS.
WRIGHT : KEITH, Manchester.
WRIGHT : LANCE ARMITAGE, Bristol.

AS LICENTIATES (15)

BEARDMORE : MICHAEL CHARLES BROADY, Wallasey.
BEE : DAVID PROCTOR, Edinburgh.
BURGESS : CECIL ARTHUR WELLINGTON.
CASSE : RONALD JOHN.
FRANKLAND : RICHARD.
GLENDINNING : COLIN WILLIAM.
HARTWELL : ALBERT, Wolverhampton.
JUDGE : RAYMOND FRANK ASPINALL, Lincoln.
KINTON : RONALD KIRTLEY (Capt. R.E.), Leicester.
PENN : RAYMOND CHARLES, Nottingham.
SARGENT : JOHN FRANCIS, M.M.
STEVENSON : RALPH WEBBER, Eastbourne.
THOMAS : JOHN EDGAR, Llanelly.
THORNE : REX (Lieut.-Commander R.N.V.R.), Poole.
WILLIAMS : HAROLD.

Notices

NEW R.I.B.A. AWARD IN TOWN PLANNING

R.I.B.A. DISTINCTION IN TOWN PLANNING

The R.I.B.A. have instituted the R.I.B.A. Distinction in Town Planning, which is obtainable by Fellows, Associates and Licentiates who are not less than 26 years of age. The test by means of which this Distinction is awarded will be conducted by a special Board of Examiners appointed by the Council of the R.I.B.A.

This new award does not take the place of the R.I.B.A. Diploma in Town Planning, which is obtainable by Fellows, Associates and Licentiates of the R.I.B.A. without any minimum age limit.

The primary purpose of the new award is to satisfy a demand from senior architects to take a qualifying test in town planning suited to their age and existing attainments.

The Examiners will meet three times a year—in February, May and October. Applications should be submitted to the Acting Secretary of the R.I.B.A. by 1 January, 1 April and 1 September, annually.

Copies of the form of application containing the procedure, regulations, general scope of study and bibliography may be obtained, free, on application to the Secretary, R.I.B.A.

ASSOCIATES AND THE FELLOWSHIP

Associates who are eligible and desirous of transferring to the Fellowship are reminded that if they wish to take advantage of the next available election they should send the necessary nomination forms to the Acting Secretary R.I.B.A. as soon as possible.

DISCIPLINARY ACTION

The membership of Mr. Eric George Richard Miles (Associate), of 20, Barons Keep, Barons Court, W.14, has, by decree of the Council made pursuant to the bye-laws, been suspended for a period of twelve months from 19 June 1945, and accordingly he ceases during that period to be a member of the Royal Institute.

CESSATION OF MEMBERSHIP

Under the provisions of Bye-law 21 the following have ceased to be members of the R.I.B.A. :—

As Associates : Bruce, Robert Alexander ; Hirst, Sydney George ; McKenzie, Colin Campbell ; Meldrum, Robert Gillespie ; Milligan, Thomas William ; Nowland, Raymond Clare ; Pursell, Harold Gordon.

As Licentiates : Bhatt, Tribhorandass Bechardass ; Oliver, John Gould.

MINUTES

SESSION 1944-45

At a general meeting held on Tuesday, 19 June 1945, at 6 p.m.
Mr. Percy Thomas, President, in the chair.
The meeting was attended by about 100 members.
The minutes of the 107th annual general meeting held on 1 May 1945 having been published in the JOURNAL, were taken as read, confirmed and signed as correct.
The Secretary having read the report of the scrutineers on the result of the Annual Election for the Council, the President declared that the President, Members of Council and the Honorary Auditors were duly elected in accordance therewith.
On the motion of the President, a vote of thanks was passed by acclamation to the scrutineers for their labours.
An informal general meeting then followed, when Professor Lionel B. Budden, M.A. [*F.*], read a paper on " The Future of Architectural Education."

"A.B.S."
HOUSE-PURCHASE SCHEME

REVISED TERMS

Advances : Up to 80 per cent. of a reasonable valuation.

Interest : 4½ per cent. gross.

Repayment : By means of an Endowment Assurance term not exceeding 25 years.

No Survey or legal fees normally charged to the Borrower.

Particulars from : The Secretary, A.B.S. Insurance Department, 66 Portland Place, London, W.1. (Tel. WELbeck 5721).

Members' Column

APPOINTMENTS

MR. C. A. L. LEVICK, B. Arch. [*A.*], has taken up an appointment as Civil Engineer to the Government of Seychelles. His address is Box 31, Victoria, Mahe, Seychelles, at which he will be glad to receive trade catalogues, etc.

MEMBER [*F.*] having been appointed by local authorities for permanent municipal housing, would consider association with another architect similarly engaged, with a view to partnership or working office arrangements. London and South-Eastern Counties only.—Apply Box 114, c/o The Secretary, R.I.B.A.

MR. J. R. MOORE [*A.*], having taken up the appointment of Architect to the Brierley Hill Urban District Council, will be pleased to receive trade catalogues, with particular reference to housing, addressed to Council Offices, Moor Street, Brierley Hill, Staffs.

MR. NORMAN EDGAR [*A.*] has been appointed Chief Assistant Architect in the department of the Borough Engineer of Tynemouth.

MR. R. E. BONSALL [*A.*], 4 Marine Terrace, Aberystwyth, has been appointed Resident Architect of the University College of Wales, Aberystwyth. He intends to renew his practice and would be glad to receive trade catalogues, etc.

MR. L. F. VANSTONE [*L.*], of 11 Grimstone Terrace, Plymouth, has been appointed Advisory Architect to Tavistock Rural District Council for post-war housing and will be glad to receive trade catalogues.

PRACTICES AND PARTNERSHIPS

MR. NORMAN T. MYERS [*F.*], of Spalding & Myers, following on the death of Mr. Reginald H. Spalding, has taken into partnership Mr. W. B. Attenbrow [*A.*], P.A.S.I. The practice will be continued under the name of Spalding, Myers & Attenbrow, at 12 New Court, Lincoln's Inn, London, W.C.2. Tel. No.: Holborn 7573.

MR. FREDERIC E. TOWNDROW [*F.*] (formerly a Senior Architect in the Directorate of Post-war Building and, recently, Controller of Experimental Building Development in the Ministry of Works), has now resumed private practice at Iddesleigh House, Caxton Street, Broadway, Westminster, S.W.1. Tel.: Abbey 3311.

As soon as Mr. Geoffrey Ransom is released from the Army, the firm will resume its previous title, Towndrow & Ransom [*F./A.*], P.A.S.I., A.M.P.T.I., Chartered Architects, Housing, Town Planning, and Building Industries Consultants.

LIEUT.-COL. RONALD WARD, R.E. [*F.*], anticipates returning to the U.K. in the immediate future and to be demobilised. Accordingly, he will be glad to receive trade catalogues, etc., at Broad View, Littleton, Nr. Winchester.

MR. FRANK WADDINGTON [*F.*] is commencing in practice at 18 Scotch Street, Whitehaven, Cumberland, and would be glad to receive trade catalogues, etc.

MR. IAN HAMILTON [*F.*] has taken into partnership Mr. Alan Chalmers, who was his chief assistant before the war and who has now been released from the Ministry of Home Security. The practice will be resumed from 16 Old Buildings, Lincoln's Inn, W.C.2 (Hol. 5046) on 2 July, under the style of Ian Hamilton, F.R.I.B.A., and Alan Chalmers, A.I.A.A., Architects.

LIEUT.-COLONEL ALEXANDER CULLEN, O.B.E., F.S.I., M.T.P.I., R.I.B.A. Dist. Town Planning [*F.*]. 92 Cadzow Street, Hamilton, Lanarkshire.

MR. RICHARD NICKSON, M.A. [*F.*], has opened a London office at 33 Welbeck Street, W.1 (Telephone WELbeck 1681-2), in addition to his office at 58 Rodney Street, Liverpool, 1 (Telephone Royal 4816), and will be glad to receive trade catalogues.

ASSOCIATE, 30 years of age, Scots, desires to enter well-established firm as partner, preferably in Scotland. Capital available if required.—Apply Box No. 101, c/o The Secretary, R.I.B.A.

ARCHITECT in Midlands (chiefly domestic work), who expects to go abroad for a short time, requires qualified assistant with view to partnership; one capable of taking off quantities and dealing with accounts preferred.—Apply Box No. 102, c/o The Secretary, R.I.B.A.

ASSOCIATE, Dip. Arch., aged 37, at present Major R.E., expecting to return from abroad in August and to be released in November, desires to communicate with established firm with a view to partnership. Capital available. Provincial town in South England preferred. Good experience in first-class general practice.—Apply Box No. 103, c/o The Secretary, R.I.B.A.

ASSOCIATE, aged 35, with special experience in flats, seeks London assistantship view early partnership; good prospects of post-war commissions; capital available.—Box No. 2835, c/o Secretary, R.I.B.A.

ASSOCIATE, 36, ex-officer (titled), wishes to enter as partner an established practice with best possible connections in London or Southern counties. Ten years' varied experience.—Apply Box No. 111, c/o The Secretary, R.I.B.A.

ASSOCIATE, 30 (Diploma in Town Planning), seeks practice or partnership with established architect in S.W. (Exeter district preferred). Part time work considered.—Apply Box No. 110, c/o The Secretary, R.I.B.A.

ASSOCIATE, 31, wishes to obtain partnership or position with view to partnership in established practice. First-class training and experience. Capital available.—Apply Box No. 109, c/o The Secretary, R.I.B.A.

ASSOCIATE, experienced, awaiting early discharge from R.A.F. (F/Lt.), seeks senior post with London architect with prospect of partnership. Capital and office furniture available.—Apply Box No. 108, c/o The Secretary, R.I.B.A.

ASSOCIATE wishes to purchase established practice in London area. May consider partnership with view to early succession.—Write Box No. 112, c/o The Secretary, R.I.B.A.

ASSOCIATE (1st Class Honours Degree), aged 32, seeks partnership with established firm. Experienced in industrial and commercial building.—Box No. 8645, c/o The Secretary, R.I.B.A.

MR. E. H. GANDY [*A.*] has resumed practice at Southrop, Lechlade, Glos., and would be glad to receive current trade catalogues.

LICENTIATE, Engineer Officer, release Group 19, experienced aerodrome design, young and practical, intimate knowledge Near East, seeks junior partnership.—Apply Box No. 107, c/o The Secretary, R.I.B.A.

MR. H. C. R. FROST [*L.*] would be glad to receive general trade catalogues, particularly relating to hotel equipment, at his office, 4 Derngate, Northampton.

MR. MORTON A. MACKENZIE [*L.*], having completed his appointment with the Ministry of Works, has now commenced in practice at Mawson's Buildings, Mosley Street, Newcastle-upon-Tyne, 1.

JUNIOR PARTNER wanted by a firm of architects [*FF.*] established in India over 25 years.—Write Box No. 113, c/o The Secretary, R.I.B.A.

ACCOMMODATION

ARCHITECT with provincial practice would like use of room and telephone, one or two days per week, as London address. Can Fellow member assist?—Apply Box No. 104, c/o The Secretary, R.I.B.A.

MEMBER requires office accommodation of about two rooms, preferably S.W.1 district, or would consider a larger suite of rooms.—Apply Box 105, c/o The Secretary, R.I.B.A.

MEMBER desires office accommodation Central London.—Apply, Box 115, c/o Secretary R.I.B.A.

CHANGE OF ADDRESS

MESSRS. W. A. ROSS & SON [*F./L.*], R.I.B.A., have changed their address to: Victoria Chambers, 17 Little Horton Lane, Bradford (Tel. No. Bradford 1943), and will be pleased to receive trade catalogues, etc.

WANTED

MEMBER desires to purchase plan drawers, drawing boards and desk.—Apply, Box 116, c/o Secretary R.I.B.A.

MEMBER wishes to obtain copies of the following publications:—Colour in Sketching and Rendering, by Guptill; Architectural Composition (1926 or later), by Curtis; Dynamic Symmetry—Practical Application, by Jay Hambridge; L'Arredamento Moderno (Second Series), by Hoepli; Decorative Art (1938 or later), Studio, Ltd. Please send details to Mr. E. H. Paisley [*F.*], 142 Windsor House, 46 Victoria Street, London, S.W.1.

MEMBERS RELEASED FROM THE SERVICES, &c.

The following members have notified the R.I.B.A. that they have been released from the Services and are resuming practice and would like to receive trade catalogues, information sheets and other data, etc.:

COLONEL R. B. ARMISTEAD, M.C. [*F.*], 10 Booth Street, Bradford.

MR. EDGAR BUNCE [*A.*], 25 Sea Road, Bexhill-on-Sea.

MR. R. A. COOKSEY [*F.*], in partnership with Mr. A. Hugh Hasnip [*L.*], under the title of Arthur W. Cooksey & Partners, at 11 Garrick Street, London, W.C.2 (Te. 6106), and "Stanchions," The Ridgeway, Tonbridge, Kent (Tonbridge 283).

MAJOR PETER DUNHAM [*A.*], architect to the Witney Rural District Council for post-war housing, 14 The Hill, Witney, Oxon.

MR. G. ANGUS MITCHELL [*F.*], F.S.I., late Lieut.-Colonel R.E., has resumed practice with the firm of Geo. Bennett, Mitchell & Son, Architects and Surveyors, 1 West Craibstone Street, Bon-Accord Square, Aberdeen.

MAJOR A. G. JURY [*A.*], Architect's Department, Borough of Taunton 2 Baldwin Road, Taunton.

MAJOR JOHN MACLENNAN, R.E. [*A.*], 3 Bon-Accord Crescent, Aberdeen.

MR. S. C. GARRETT [*F.*], having been released from military service, is resuming control in the firm of Messrs. Thomas Garrett & Son, 34 Ship Street, Brighton.

MAJOR D. R. NICHOLLS, R.E. [*L.*], F.S.I., F.Inst.Arb., 21a High Street, Chard, Somerset. (As from 17 July.)

MR. W. J. CARPENTER TURNER [*A.*], Minster Chambers, Great Minster Street, Winchester.